

AN ARCHAEO-METALLURGICAL STUDY OF THE EARLY AND MIDDLE BRONZE AGE IN LURISTAN, IRAN

BY

Friedrich BEGEMANN(1), Ernie HAERINCK(2), Bruno OVERLAET(3),
Sigrid SCHMITT-STRECKER(1), Françoise TALLON(4)
(1. Max-Planck-Institut für Chemie, Mainz / 2. Ghent University / 3. Royal
Museums of Art and History, Brussels & Ghent University / 4. Musée du
Louvre, Paris)

Abstract: Copper-base artefacts from Bronze Age Luristan have been analysed for their chemical composition and the isotopic composition of their lead. We find no significant systematic differences between a group of objects recovered in the Pushti Kuh region in the course of controlled excavations during the Belgian Archaeological Mission in Iran (BAMI) and a second group of artefacts from the Louvre Museum which were acquired on the art market. According to these material features the objects from the art market are made of genuine “Luristan” metal which does not exclude the possibility that the artefacts are recent forgeries made of “old” metal. The data suggest a large fraction of the artefacts, copper *and* bronze, to derive from copper ores as they are available in the eastern part of the central Zagros Mountains from where also tin ores have been reported. Bronzes with high ^{206}Pb -normalized abundance ratios, conspicuous in contemporary Mesopotamia, are missing in Luristan. We have no satisfactory explanation to offer why the manifold cultural and material connections between Mesopotamia and Luristan should have excluded the trade in bronzes with such exceptional lead isotopy.

Keywords: Iran, Luristan, Bronze Age, metallurgy, provenance study, lead isotopy.

Introduction

A metallurgical study of 3rd millennium BCE copper-base artefacts from Luristan was initiated in 1986 by Françoise Tallon of the Louvre Museum as part of a wider research project on early Iranian metallurgy. The study focused on the collection of “Luristan” artefacts in the Louvre Museum with the goal to compare their metallurgical characteristics with those from other metallurgical centres in Iran. As the “Luristan” collection of the Louvre Museum did not come from controlled excavations but was acquired from various sources on the art market, there always remained, and still remains, some doubt about the specific origin and date of these objects. In

view of this, a selection of well-documented, excavated metal artefacts from the Belgian excavations in the Pusht-i Kuh region of Luristan was added to the study. Samples from the metal objects, which are now kept in the Royal Museums of Art and History, Brussels, were taken at Ghent University on 17 March 1987 by Françoise Tallon (Musée du Louvre) and Dr. Loïc-Pierre Hurtel (Laboratoire des Musées de France). These Pusht-i Kuh artefacts constitute a control group and, at the same time, provide the possibility to establish whether this sub-region had specific metallurgical characteristics. The Belgian excavations also provided the general chronological framework of the Early Bronze Age in Luristan.

Pusht-i Kuh, Luristan, research and chronology

The Belgian Archaeological Mission in Iran (BAMI) worked from 1965 until 1979 in the Pusht-i Kuh region of Luristan (now Ilam province, fig. 1). These expeditions, on the initiative of Ghent University and the Royal Museums of Art and History, Brussels, directed by Louis Vanden Berghe, targeted ancient graveyards. Chalcolithic, Bronze Age and Iron Age cemeteries were excavated and preliminary reports were regularly published in *Iranica Antiqua*, *Archéologia* and other periodicals (for a complete list see Haerinck & Overlaet 1996: 4-6). The publication of the final reports, the “Luristan Excavation Documents”, started in 1996 and is still continuing (Haerinck & Overlaet 1996, 1998, 1999, 2004, 2006, 2008; Overlaet 2003).

A selection of the finds from the Belgian excavations is kept at the Royal Museums of Art and History, Brussels, and is available for advanced studies. Apart from the present study on the initiative of the Louvre Museum, other technological studies have been executed or are still in progress. In 1989 a project was started to have a large number of 3rd-1st millennium BCE copper/bronze objects analysed at the “Museum Applied Science Center for Archaeology” (MASCA), Philadelphia, USA. The first results have been published and more are to come in the near future (Fleming et al. 2005; Fleming et al. 2006).

In order to evaluate the present technological data in their proper geographical, cultural and historical settings, it is necessary to outline the general chronology of the Early Bronze Age in the Pusht-i Kuh as it appears from the BAMI excavations (Haerinck & Overlaet 2002, 2004, 2006: 66).

The name “Pusht-i Kuh” or “over the mountain” refers to the Kabir Kuh, the last major mountain range before the Mesopotamian lowland as seen from

the Iranian plateau (fig. 1). The region is characterised by intra-mountainous small plains or valleys and a rugged countryside. Larger plains are extending towards Khuzistan province in the South and the Pish-i Kuh (“before the mountain”) in the North and East. Thus, the region sits between three major cultural areas of the ancient Near East, namely Central Western Iran, Mesopotamia and Elam. Moreover, at its north-western edge, it borders on the “Great Khorasan Road” which linked the Mesopotamian world to central Iran. It is thus plausible that the region can not be considered a closed entity and that simplified conclusions will never be possible. Influences, raw materials as well as finished products from various sources will always have found their way to Pusht-i Kuh. Indeed, all dating of the famed “Luristan bronzes” is based on stylistic similarities with non-Luristan artefacts which, of course, implies that close connections existed between Luristan and nearby cultural centers.

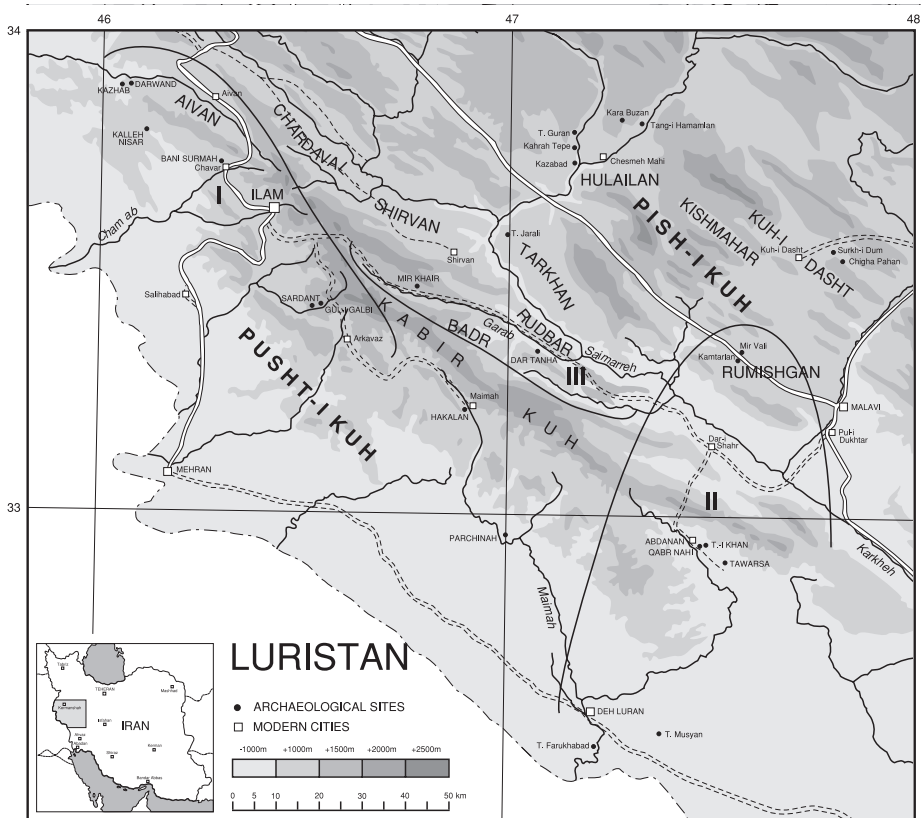


Fig. 1. Map of the Pusht-i Kuh with its three cultural zones during Phase II-III.

The archaeological evidence at hand allows a division of the Pusht-i Kuh into three regions for at least part of the third millennium, based on the tomb constructions and on the influence of neighbouring regions mainly recognisable in the pottery.

Before discussing the archaeo-metallurgical data, it is useful to outline the general chronology of the area. The third millennium BCE in Pusht-i Kuh is divided into three stages, an “Early” (Phase I), “Middle” (Phases II and III) and “Late” (Phase IV) Early Bronze Age.

Phase I, the earliest stage of the Early Bronze Age (late 4th/early 3rd mill. BCE = Djemdet Nasr and early Early Dynastic I in Mesopotamia) is characterised by small, mainly individual tombs. This phase is present at Mir Khair and at Kalleh Nisar, area AI. Metal is still rare in this phase and it is confined to simple items such as awls, flat axes, tanged knives, coiled bracelets and coiled finger rings. None of the objects analysed in the present study belong with certainty to this phase.

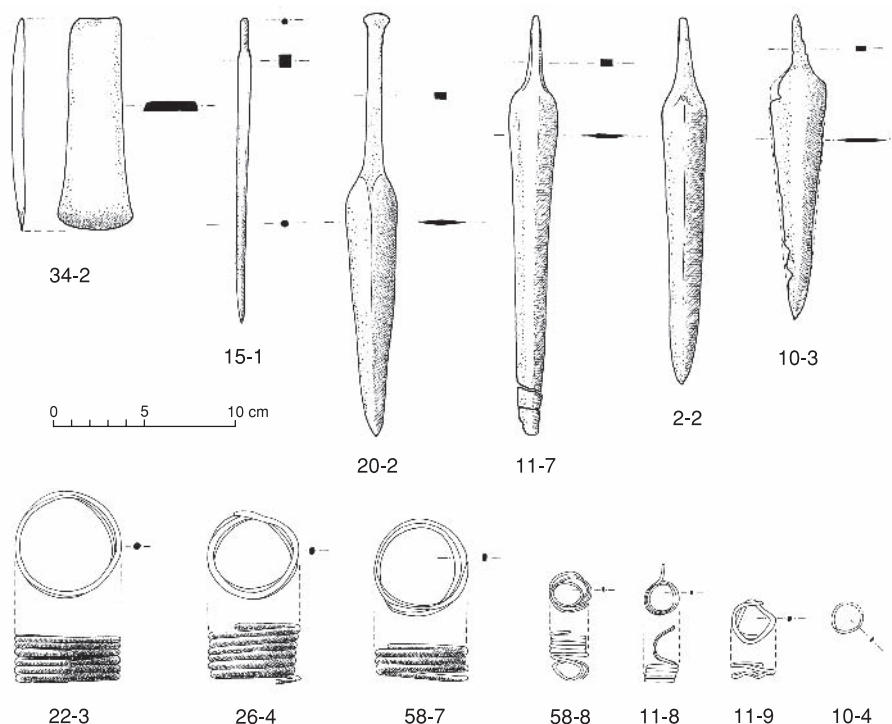


Fig. 2. Survey of metal artefacts from the Phase I graveyard at Mir Khair.

Phases II and III of the Early Bronze Age cover a large part of the 3rd millennium BCE (ED I to somewhere in the Akkadian period in Mesopotamia). Phase II is characterised by the construction of large communal corridor-shaped tombs (Pl. 1). Based on the evidence at hand it seems as if the construction of such tombs is limited to Early Dynastic I and II in terms of Mesopotamian chronology. There is at present no evidence for the construction of tombs during Phase III (Early Dynastic III and beginning of the Akkadian period in Mesopotamia). Rather, during Phase III the large communal tombs from Phase II continued to be used. Actually, some of these tombs were also occasionally re-used much later, some even as late as during the Isin-Larsa and Old Babylonian periods.

Since the tombs were used by many generations and individuals during which time objects were broken, displaced, removed and discarded, it is extremely difficult to attribute secure dates to single objects (see table 4). Often, only a broad and somewhat blurred picture emerges, based mainly on parallels with sites in other regions where more precise dates are available. Even so, simple objects, such as rings, can not be precisely dated, particularly when found in large communal tombs. This leaves the excavators in the frustrating and extremely unsatisfactory situation that objects acquired on the antiquities market, more often of unknown provenance and dubious origin, are generally “dated” more precisely than is possible for genuine artefacts procured with considerable efforts.

Several objects can roughly be attributed to the Early Dynastic III/Akkadian period, based on comparisons with finds from Mesopotamia or SW-Iran. One should be aware, however, that this comparative dating may easily distort our understanding of early metalwork. One has to realise that much more excavated material is available from these periods than from ED I/II. This may be partly due to chance, but probably also reflects a change in burial customs. It seems more metal artefacts were placed in tombs in the later part of the Early Dynastic period. Metal may simply have become more available or less costly, resulting in more metal artefacts being removed from circulation through deposition in tombs. As the known variety of ED I/II is consequently limited and incomplete, there is a general tendency to compare metal items to better documented Early Dynastic III/Akkadian artefacts. Most likely, several types commonly attributed to these periods, were already produced at an earlier date.

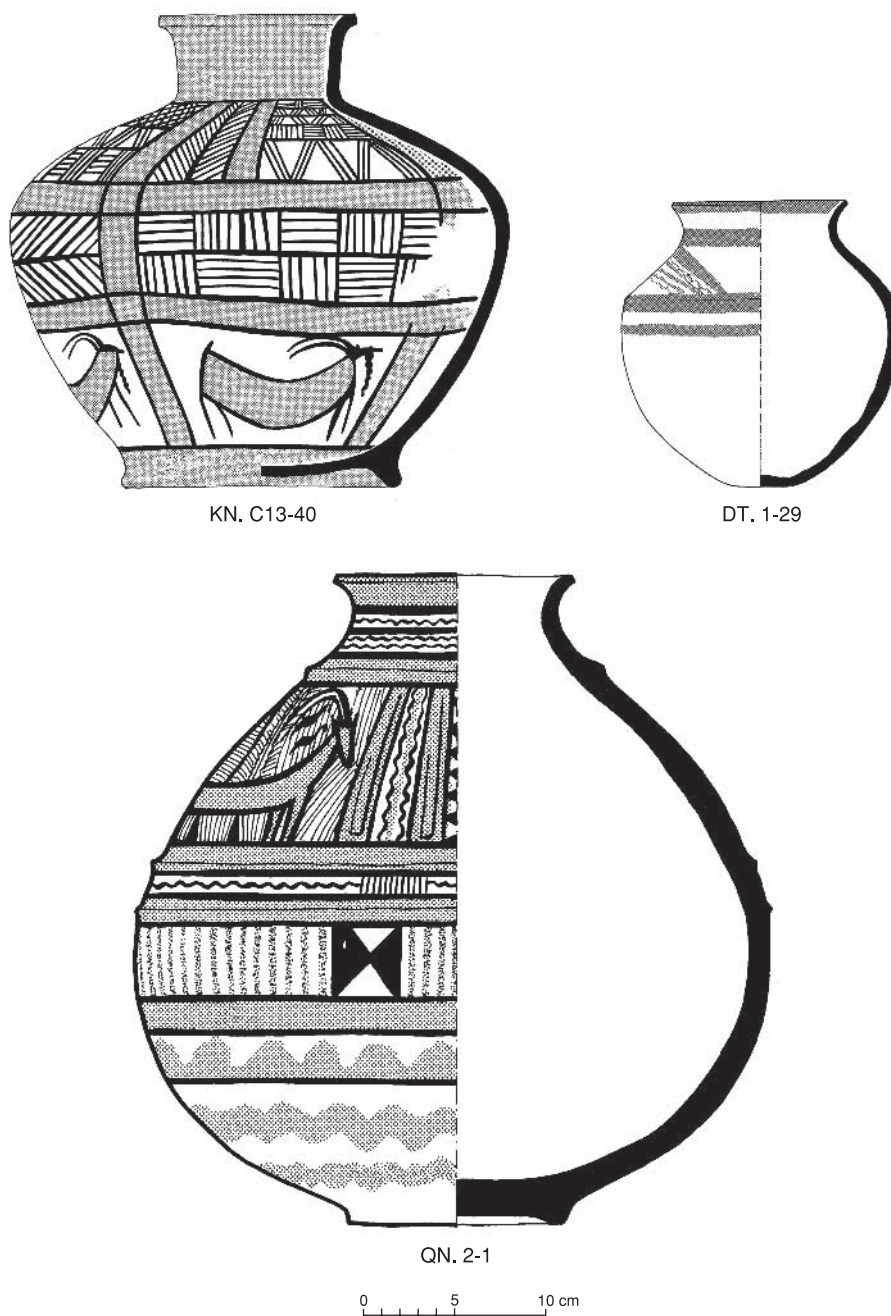


Fig. 3. Characteristic painted pottery of zone I (Kalleh Nisar, top left), zone II (Qabr Nahi, bottom) and zone III (Dar Tanha, top right).

Regionally, three different zones can be distinguished during Phases II and III, mainly by their painted pottery (figs. 1 and 3). The *Mesopotamia-related “zone I”* has by far the largest tombs in Pusht-i Kuh. They are up to 16 m long, are well built with large boulders and are covered with large flat stones (Pl. 1). A strong Mesopotamian influence in this part of the Pusht-i Kuh is obvious from its pottery. Among the plain pottery are imports and imitations of Mesopotamian types. Polychrome vessels with animals on the lower part are inspired by the Mesopotamian scarlet ware of the Hamrin and Diyala. Zone I tombs are known from Bani Surmah, Kalleh Nisar (area C) and Mehr War Kabud. Objects from all three sites are included in the present study.

The *Deh Luran-related “zone II”* in southern Pusht-i Kuh is characterised by 6 to 10 m long tombs with flat roofs. The monochrome ware shows simple geometric decorations. Shapes and decorations are particularly related to finds from Susa, Godin III:6 and Mir Vali, in Rumishgan. On the polychrome pottery metopes on the shoulder are characteristic, which frame trees or goats with elongated bodies and birds on their back. This polychrome style has particular parallels in the Deh Luran and the Rumishgan valley and thus seems to be confined to the southern part of Luristan. Such tombs were excavated at Pusht-i Qaleh-i Abdanan, Qabr Nahi, Takht-i Khan and Tawarsa. Metal is very rare in the tombs. No metal artefacts of this zone II were investigated in the present study.

The tombs in the *Pish-i Kuh-related “zone III”*, to the North of the Kabir Kuh, are similar to those in the central part of the Pish-i Kuh. They are also corridor-shaped and measure between 6 and 8 m in length, but they have a gabled roof (Pl. 7). Monochrome painted jars are related to the central Pish-i Kuh, particularly to Godin III:6 pottery. The rare presence of zone I-related polychrome pottery in association with zone III monochrome ware testifies to existing interzonal contacts. Five metal objects from zone III tombs at Dar Tanha were included in the study.

Phase IV, the latest stage of the Early Bronze Age, documents the last few centuries of the 3rd millennium and the early 2nd millennium BCE. In terms of Mesopotamian chronology this covers the later part of the Akkadian period, the Gutu and the Ur III period, and possibly part of the Isin-Larsa period. There is a clear difference in tombs and burial customs in the Pusht-i Kuh in comparison with the preceding Phases II-III. The so-called “Gutian” tombs of the Late Phase are small tombs of 1.20 to 1.70 m length with

only three sidewalls constructed from stones (Pl. 2). Among the burial goods are monochrome painted jars inspired by Pish-i Kuh types but with a simpler decoration (triangles and groups of vertical lines). Some plain vessels are Mesopotamian imports. Metal objects are quite common among the burial goods. Characteristic are shafthole axes of folded sheet metal. Phase IV tombs, of which metal objects are incorporated in the present study, were discovered at Kalleh Nisar AII, Darvand A, Gululal-i Galbi and Sardant. These sites are all located in “zone I” and since no material from the other zones is available, it is at present not possible to ascertain whether the cultural variation within the Pusht-i Kuh attested in Phases II and III, continues to exist in Phase IV.

The Louvre collection of Luristan “Bronzes”

The artefacts from the Louvre incorporated in this study come from the antiquities market (see Table 2, column 3). With but a few exceptions they were acquired before scientific excavations had been carried out in Luristan, but at a time when the metal production of the region was already well known owing to numerous objects of outstanding technical and aesthetic qualities from clandestine excavations which, since 1928, had attracted the attention of collectors and museum curators. Most of the pieces were purchased before 1935. Among those, some come from the collection of André Godard, the Director of Antiquities in Tehran who visited the region neighbouring Harsin, the town where the first “Luristan bronzes” appeared on the market. Godard bought some of them and published them as early as 1931, together with details of his exploration of the region (Godard 1931). The six items from the collection of D. David-Weill were acquired in 1931 and 1932; they comprise a Bactrian axe (Louvre-39, Pl. 18) which was included for comparison; the five pieces from the Citroën collection were no doubt purchased during the “Croisière jaune” expedition in 1931-1932; and still others were obtained at Nehavand between 1930 and 1932 in the course of the Contenau-Ghirshman missions (see Contenau & Ghirshman 1935: v-vi). Also in 1931 the rein ring (Louvre-12, Pl. 13) and two daggers (Louvre-3 and 14, Pl. 12, 14) and an axe (Louvre-46, Pl. 19) were bought by the Musée du Louvre. Among those acquired later, eighteen are from the collection of the French diplomat J.-C. Coiffard who purchased them while posted in Tehran (acquired by the Louvre in 1958; see Amiet 1963); and two are owing to the generosity of the great Tehran collector and connoisseur Mohsène Foroughi (Louvre-47 & 48, Pl. 19).

The Louvre objects are strikingly different from the corpus of rather mundane artefacts actually *excavated* in Luristan by the BAMI, since they were acquired because of their aesthetic appeal and superior technical quality, in some cases for their zoomorphic decoration. They are generally considered genuine owing to the fact that most of them were purchased at an early date and/or in Iran by expert collectors. At the time they were acquired, all copper-base objects with such decoration were labelled “Luristan bronzes” -indeed they served to define “Luristan bronzes”-, but we know by now that some of them may come from other regions, particularly from Bactria or from Elam. And we also know by now that many of the objects are not bronzes in the scientific sense in that they contain but traces of tin, not the canonical tin content of 1 % or more which is generally considered to separate bronzes from non-bronzes.

Chronologically, the objects can be divided into three periods. The earliest objects date from the middle of the Early Bronze Age, ca 2600-2300 BCE (Louvre-1 to 15, Pls. 12-14) which corresponds to Phase III of the Belgian excavations and to the Early Dynastic III/Early Akkadian period in Mesopotamia; objects from the late Early Bronze Age, ca 2300-2000 BCE (Louvre-16 to 33, Pls. 14-17), correspond to Phase IV of the BAMI excavations and Late Akkadian, Guti, and Ur III periods in Mesopotamia. Finally a few of the artefacts belong to the first centuries of the 2nd millennium BCE (Louvre-34 to 43, Pl. 17, 18).

From the first period some of the objects are stylistically related to Mesopotamian artefacts: a chariot rein ring decorated with human figures (Louvre-12, Pl. 13) recalls similar ones from Ur and Kish; a battle axe with sinuous profile (Louvre-6, Pl. 12) is identical to those depicted on monuments at Ur, Kish, and Mari, and is also similar to specimens found at Bani Surmah, area A, and at Susa. A footed goblet (Louvre-10, Pl. 13), finally, is related to one made of gold and found in the tomb of Pu-abī at Ur. Others are of Iranian types: tubular mace heads similar to those from Susa or more richly decorated (Louvre-1 and 7 to 9, Pls. 12, 13); daggers with riveted metal handles, decorated in relief, and wide blades with vertical lines (Louvre-3, 4, 14 and 15, Pls. 12, 14), resembling more precious models from the Royal Tombs at Ur, but nevertheless typical of Luristan where a complete example was excavated at Takht-i Khan, in central Pusht-i Kuh (Vanden Berghe 1973: 29); and blades from Mehr War Kabud and Bani Surmah, area A. Of Iranian type are also one globular spouted vessel (Louvre-5, Pl. 12), only known from Iran, as well as three spouted vessels decorated with

scrolls or braids (Louvre-2, 11 and 13, Pls. 12, 13) of a type known from different parts of Iran and Bactria, but also attested in Mesopotamia although there they occur less frequently and without decoration.

The second chronological period (Louvre-16 to 33, Pls. 14 to 17) is essentially represented by axes, most of them of Iranian type. There are axes or pick axes characterised by a flange butt with a horizontal ridge, identical with examples from Kalleh Nisar A II (Vanden Berghe 1970: 72), Surkh Dum-i-Luri and Susa (Tallon 1987), which are also known from Til Barsip in Syria. Others have long shaft holes, decorated with spikes, or show a curved protuberance on the butt. Of Mesopotamian type, but also found in Iran, are axes with a conical projection at the butt, sometimes referred to as Naram-Sin axes because one of them is depicted on the stele, now in the Louvre, of Naram-Sin, king of Akkad during the middle of the 23rd century BCE. Finally, there are a Bactrian-type hammer with lock-like curls on the butt and birds' heads at the top (Louvre-29, Pl. 16), similar to one found at Susa inscribed with the name of Shulgi, second king of the 3rd dynasty of Ur, and a tubular mace head with a ribbed bulge (Louvre-32, Pl. 16) which is of a type well represented among the collections of "Luristan bronzes" with one of them being inscribed with Naram-Sin's name (Dossin 1962: 158-159, pl. XXV).

The artefacts of the third period (Louvre-34 to 43, Pls. 17, 18) are again mostly of Iranian type: Atta-hushu and related types of axes; axes with zoomorphic decoration, one with the head of a lion "spitting the blade", as it appears also at Susa although in this case the lion's head is missing. On another shaft-hole axe the blade is cast as the body of an upside-down placed lion, head and front legs forming the shaft hole (Louvre-37, Pl. 17). And finally there is a bronze loop held by human hands (Louvre-43, Pl. 18), possibly a belt buckle, identical with examples excavated at Susa.

Archaeo-metallurgy

Chemical composition

Fifty-eight of the excavated artefacts (Table 1, Pls. 3 to 11) and 48 of the purchased objects from the Louvre collections (Table 2, Pls. 12 to 19) were investigated for their chemical composition. Among the artefacts from the Louvre there is a preponderance of axes and other heavy implements. This dominance of heavy objects presumably reflects the art market where

massive artefacts are more common than are unobtrusive items like awls, needles, pins and finger rings.

Analyses for antimony, arsenic, bismuth, cobalt, gold, iron, lead, nickel, silver, tin, and zinc were performed in the Laboratoire des Musées de France, Paris by optical atomic emission spectroscopy (AES) (Tables 1 & 2). Aliquants of 30 of the Louvre samples were also subjected to neutron activation analysis (NAA) to determine their contents of antimony, arsenic, cobalt, nickel, silver, and tin. The agreement between the results obtained by the two analytical techniques is remarkably good (Pernicka, personal communication), in particular when taking into account the wide range of concentrations encountered. Between the samples the absolute concentration of arsenic varies about hundredfold, that of silver by more than a factor of 300, and the contents of antimony, nickel and cobalt vary by more than a factor of thousand. For the individual elements the mean ratios of AES-concentrations to NAA-concentrations are 0.91 for antimony, 1.36 for arsenic, 1.14 for cobalt, 0.85 for nickel, 1.01 for silver and, in the bronzes, 1.01 for tin. For the sake of consistency we use the AES-data from the Louvre throughout. Moreover, we restrict ourselves to mentioning some summary features, not all of which have been pointed out before.

A major difference between the bronzes from western Pusht-i Kuh and those acquired on the art market is their tin content.¹ Among the excavated objects the spread in tin content is only half as wide, between 2 % and 8 % tin, as it is in the purchased ones where the range is between 2 % and 16 % tin (fig. 4). Moreover, in the BAMI artefacts there is a pronounced peak in the distribution curve of tin contents at around 3 %, in the samples from the Louvre an equally pronounced one at around 10 % tin. It would appear that,

¹ We follow the conventional definition of bronze as copper containing more than 1 percent of tin. As suggested by the hiatus at around 1 % tin in the bi-modal distribution of the tin contents (fig. 8, lower panel) the same limit appears to be reasonable for the present artefacts, also. Moreover, such a distribution indicates the bronze in Luristan to be a deliberate alloy which did not come about by accidentally co-smelting copper ores “contaminated” to a variable degree with ores of tin. — Arsenical copper, with a few percent of arsenic, qualifies also as a two-component alloy. For arsenic, however, one observes invariably a single-mode distribution of its concentration around a most-frequent value (fig. 5) which varies from region to region (see, e.g., Berthoud et al. 1982). This makes the definition of any arsenic concentration to distinguish between As-rich copper and As-poor copper somewhat arbitrary; in the present instance we have chosen as separation line a concentration of 2 %.

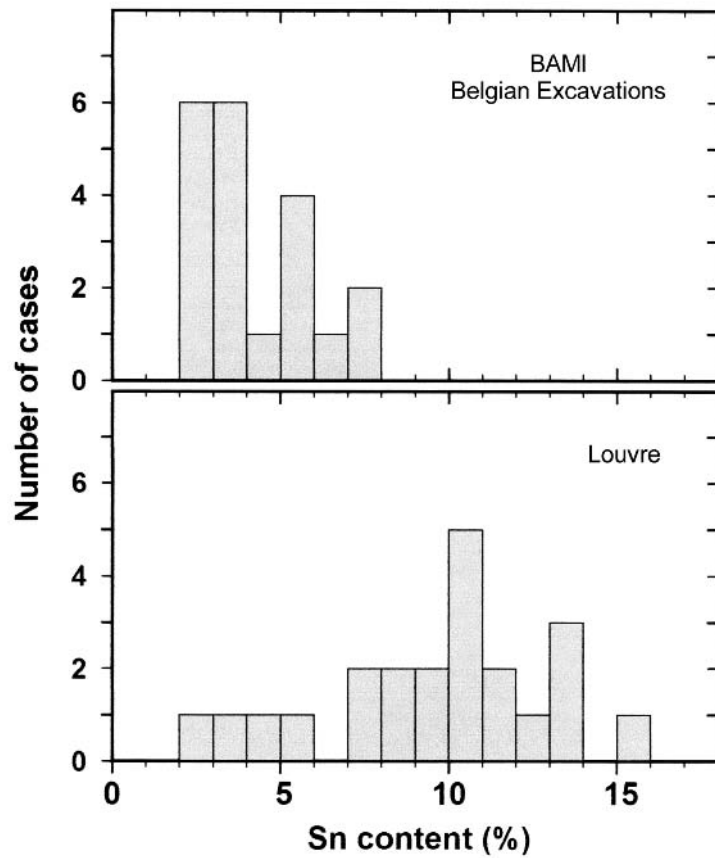


Fig. 4. The distribution of tin content among bronze objects excavated in Western Luristan (Pusht-i Kuh) is markedly different from that in artefacts acquired on the art market.

assuming a local production of the bronze, in western Luristan there was a better control over the tin content and, moreover, that tin was used more sparingly. Possibly tin was also less readily available in Luristan.

The mean (and median) arsenic contents of the non-bronzes are higher than those of the bronzes by a factor of 2-3 (fig. 5). We interpret this to mean that, towards the end of the 3rd millennium BCE, metallurgists in Luristan, or those who supplied the metal to Luristan, were well aware that the beneficial features resulting from alloying copper with a few percent of tin are, to a large extent, the same as those of copper containing a few percent of arsenic. The craftsmen must have realised that the addition of tin to

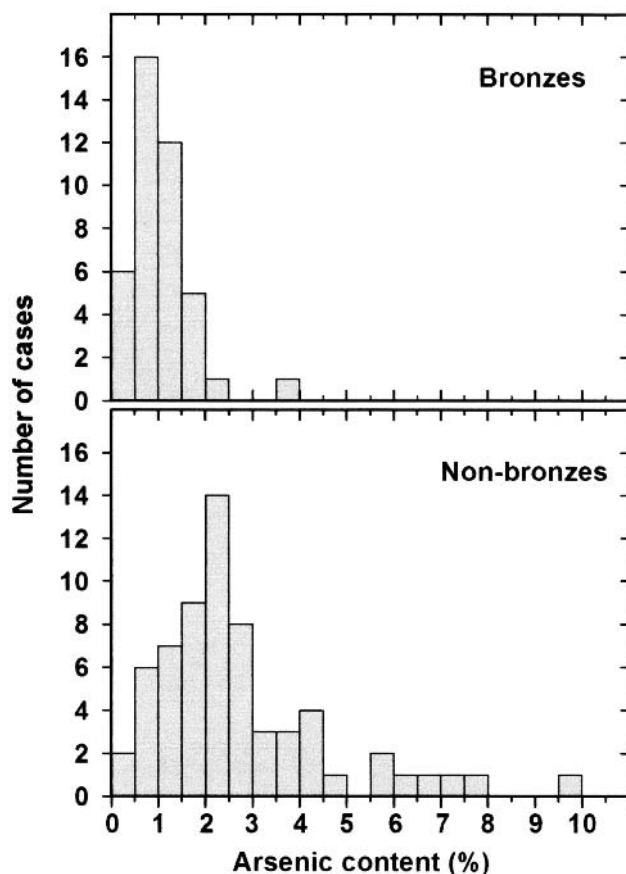


Fig. 5. The arsenic contents of bronzes and non-bronzes from Luristan both show a modal distribution, but the distribution curve for the bronzes is shifted to lower concentrations. Average concentrations are 1.06 % of arsenic for the bronzes and 2.73 % for the non-bronzes. From a rational point of view this is perfectly reasonable since the addition of (valuable) tin to copper containing more than a few percent of arsenic will not significantly improve on the material properties of the metal.

such arsenical copper would not significantly improve on the material qualities; rather, it would be a waste of a valuable commodity. By implication, the metallurgists must then also have been able to distinguish arsenic-rich copper with, say, more than 2 % of arsenic from such with less than 2 %. It is not clear at present whether this was done based on some material feature of the smelted metal or whether the ores utilized for smelting were already chosen accordingly.

In addition to (tin)bronze and arsenical copper there are a few lead-rich alloys². Most of them are binary alloys, but there are also lead-rich *bronze* objects with around 2 % lead. Two of them qualify as intentional lead alloys if we choose, somewhat arbitrarily, a concentration of 2 % to separate intentional alloys from accidentally lead-rich metal where the lead originated with the copper ores utilized. Nine objects have lead contents between 8 % and 16 % which is almost certainly due to the deliberate addition of lead. Because of their higher fluidity and reduced surface tension the castability of such lead-rich alloys is far superior to pure copper, and also superior to bronze, which facilitates the casting of intricate objects or such with elaborate surface ornamentation. Thus, it makes sense, metallurgically speaking, that the rein ring (Louvre-12, Pl. 13) and also the two richly decorated ED III mace heads Louvre-1 and Louvre-7 (Pls. 12, 13) should be made of such alloys. It is surprising, however, to find also some axes and picks (Louvre-21, 25, 30, 31) to be made of copper with ca 10 % lead because the properties one expects of implements to be used for work are rather detrimentally affected by such high lead contents. But then style and the absence of signs of wear anyhow suggest these implements to have been ceremonial objects never meant for daily use. This is true for some of the axes and picks from the Louvre collections (Pls. 14 to 18), but it is obviously also the case for an axe from Kalleh Nisar (BAMI-43, Pls. 9, 10) which is made from folded copper sheet metal which makes it rather useless as a tool, be it for cutting or for splitting, or as a weapon. It should be noted that such lead-rich alloys are found among the excavated objects as well as among the bought objects, emphasizing that lead-rich alloys do not automatically indicate forgeries.

The concentrations of trace elements antimony (Sb), bismuth (Bi), cobalt (Co), gold (Au), nickel (Ni) and silver (Ag) are very much the same in the artefacts from the two subsets of objects (Tables 1 & 2, fig. 6). There also seem to be no significant differences between bronzes and non-bronzes in the contents of these trace elements; for Ag, Co, Ni and Sb this is illustrated in fig. 6. Together with the arsenic evidence

² For lead contents above the solubility limit of lead in copper of ca. 1 % measured concentrations are notoriously irreproducible. This is true in particular if only small samples are analysed where the sample size is commensurate with the size of the lead blobs segregated from the copper.

Table 1: Chemical composition and trace element contents of copper-base artefacts from Luristan excavated by the BAMİ. Analyses by optical emission spectroscopy were performed by Drs. L. Hurtel and M. Menu at the Laboratoire de Recherche des Musées de France of the Louvre, Paris. Samples marked in column 1 with an asterisk (*) have also been analysed for the isotopic composition of their lead (see table 3).

(1) Initials of site (BS = Bani Surnah, DA = Darvand, DT = Dar Tanha, GLG = Gululal-i Galbi, KN = Kalleh Nisar, MWK = Mehr War Kabud, SD = Sardant), followed by “Area” (if applicable: A, B, C or AII), tomb number and number of the object in the tomb.

No.	Excavation No. (I)	Lab. No.	Pb [%]	Sn [%]	As [%]	Sb [µg/g]	Fe [µg/g]	Ag [µg/g]	Ni [µg/g]	Bi [µg/g]	Co [µg/g]	Au [µg/g]	Zn [µg/g]	Type of object	Pl.	Final excavation reports (Luristan Exc. Documents)
BAMI-1 *	BS.A6-32	17850	2.130	3.150	0.292	140	2820	280	3100	440	900	1	80	bracelet	3	LED VI: 46, fig. 22, pl. 23
BAMI-2	BS.A1-5	17851	0.172	0.200	0.602	760	5750	960	2650	90	470	2	50	pin	3	LED VI: 43-46, fig. 21, pl. 9
BAMI-3	BS.A13-6	17852	0.089	0.004	1.000	830	2600	1130	530	30	20	1	10	pin	3	LED VI: 43-46, fig. 21, pl. 30
BAMI-4	BS.A3-4	17853	0.527	5.200	0.493	130	1820	580	670	30	120	14	10000	pin	3	LED VI: 43-46, fig. 21, pl. 14
BAMI-5	BS.A14-41	17854	0.322	2.020	1.550	310	2280	730	8030	150	140	21	60	awl	3	LED VI: 40, fig. 18, pl. 41, 43
BAMI-6	BS.A2-20	17855	0.060	0.125	0.985	360	3050	300	2000	30	80	1	20	saw	3, 4	LED VI: 37-39, fig. 17, pl. 11-12
BAMI-7	BS.A3-3	17856	0.195	0.033	1.770	310	10500	1070	1500	30	60	14	20	dagger	3	LED VI: 30-32, pl. 14
			0.206	0.065	2.530	800	13500	1250	4230	30	120	10	20			
BAMI-8	BS.A2-15	17857	0.284	0.008	1.700	8000	7150	660	4500	30	500	7	120	dagger	3, 4	LED VI: 30-32, pl. 11, 13
			0.110	0.004	0.270	40	43200	520	760	30	500	4	80			
BAMI-9	BS.A14-37	17858	0.108	0.045	2.200	2300	13200	1230	4500	30	60	12	60	dagger	3	LED VI: 30-33, fig. 14, pl. 41
			0.160	0.323	2.030	850	9250	1620	7580	30	140	12	30			
BAMI-10	BS.A14-54	17859	0.039	0.002	2.520	220	70	1400	690	160	5	1	420	vessel	3, 4	LED VI: 41-42, fig. 20, pl. 41, 43
BAMI-11 *	BS.A2-2	17860	0.150	0.025	1.820	600	1270	1180	2500	30	20	28	10	axe	3, 4	LED VI: 35-37, fig. 16, pl. 11, 13
BAMI-12	BS.A13-4	17861	0.388	0.048	2.700	750	6830	1430	7120	40	180	18	30	axe	3	LED VI: 35-37, fig. 16, pl. 30
BAMI-13 *	BS.A2-9	17862	7.850	0.003	0.272	30	200	100	3530	30	60	5	60	axe	3, 4	LED VI: 35-37, fig. 16, pl. 11, 13
BAMI-14	BS.A2-3	17863	0.112	0.002	1.630	620	9900	620	200	120	14	6	50	axe	5	LED VI: 35-37, pl. 11
BAMI-15 *	BS.A2-7	17864	2.000	0.005	2.500	300	3040	560	2170	30	7	8	10	axe	5	LED VI: 35-37, pl. 11
BAMI-16	BS.A2-11	17865	0.089	0.195	2.000	670	11800	1150	2580	30	210	7	10	chisel	5	LED VI: 32-35, fig. 15, pl. 11
BAMI-17 *	BS.B12-4	17866	0.735	3.300	1.000	600	6000	250	3280	110	2230	16	50	pin	5, 6	LED VI: 43-46, fig. 21, pl. 64

No.	Excavation No. (I)	Lab. No.	Pb [%]	Sn [%]	As [%]	Sb [µg/g]	Fe [µg/g]	Ag [µg/g]	Ni [µg/g]	Bi [µg/g]	Co [µg/g]	Au [µg/g]	Zn [µg/g]	Type of object	Pl.	Final excavation reports (Luristan Exc. Documents)
BAMI-18	BS.B11-2	17867	0.064	3.000	1.300	790	1730	250	3820	80	650	7	10	pin	5, 6	LED VI: 43-46, fig. 21, pl. 63
BAMI-19	BS.B14-1	17868	0.246	0.040	2.100	740	10500	350	960	30	46	2	50	axe	5, 6	LED VI: 35-37, fig. 16, pl. 65
BAMI-20 *	KN.AI.1-4	17869	0.363	3.200	0.987	950	5730	770	1460	30	200	10	30	finger ring	5	LED VII: fig. 21, pl. 3
BAMI-21	KN.AI.3-1	17870	0.093	2.730	0.570	80	4100	170	4970	30	340	6	10	pin	5, 6	LED VII: fig. 19, pl. 3, 67
BAMI-22 *	KN.AI.3-2	17871	0.170	2.770	0.934	140	8950	260	5770	90	570	10	40	pin	5, 6	LED VII: fig. 19, pl. 3, 67
BAMI-23 *	KN.AI.4-5	17872	0.245	2.900	0.693	370	2220	370	4340	170	440	13	80	bracelet	5	LED VII: fig. 20, pl. 3
BAMI-24	KN.AI.12-8	17873	0.039	0.066	2.250	3170	15200	430	11000	140	190	3	10	pin	5, 6	LED VII: fig. 19, pl. 8, 67
BAMI-25 *	KN.AI.2-4	17874	0.401	2.330	0.740	330	7280	800	630	120	120	7	60	bracelet	5	LED VII: fig. 20, pl. 3
BAMI-26	KN.AI.2-8	17875	0.033	5.800	0.507	80	1950	450	330	70	140	12	50	vessel	5, 6	LED VII: fig. 17, pl. 3, 66, XXV
BAMI-27 *	KN.C3-30	17876	0.402	3.650	0.976	1260	1380	770	2660	90	340	12	30	dagger	5, 6	LED VII: fig. 14, pl. 18, 63
BAMI-28 *	KN.C13-79	17877	0.142	0.796	1.800	270	700	1100	1560	30	80	5	40	finger ring	5	LED VII: pl. 31
BAMI-29	KN.C3-33	17878	0.043	5.230	0.240	70	1500	620	270	70	30	13	10	pin	5	LED VII: fig. 19, pl. 18, 67
BAMI-30 *	KN.C13-31	17879	0.072	0.153	0.211	190	300	240	500	30	80	7	50	pin	5	LED VII: fig. 19, pl. 30
BAMI-31 *	KN.C13-33	17880	0.294	7.350	0.505	360	1820	660	2460	30	120	27	10	pin	5	LED VII: fig. 19, pl. 30
BAMI-32 *	KN.C12-11	17881	0.105	3.950	0.765	260	1880	300	1920	30	240	19	270	spearhead	5, 6	LED VII: fig. 15, pl. 29, 64, XXIV
BAMI-33 *	DT.1-8	17882	0.130	0.013	3.330	730	4450	1850	4050	30	10	1	10	dagger	7, 8	LED IX
BAMI-34 *	DT.1-18	17883	0.016	0.002	0.635	150	7030	950	730	30	30	1	10	bracelet	7, 8	LED IX
BAMI-35	DT.1-14	17884	0.028	0.034	2.830	1780	4000	1920	480	30	10	3	10	awl	7, 8	LED IX
BAMI-36 *	DT.1-17	17885	9.250	0.010	2.550	1060	2600	1300	1780	40	30	1	80	belt buckle	7, 8	LED IX
BAMI-37 *	DT.1-12	17886	0.121	0.004	2.850	1530	4580	1550	2220	250	50	1	20	dagger	7, 8	LED IX
BAMI-38 *	DT.1-2	17887	0.128	0.005	2.160	560	3300	1450	920	160	7	1	30	axe	7, 8	LED IX
BAMI-39 *	MWK.3-1	17888	0.288	4.300	1.650	1150	5200	1350	12000	180	310	13	160	dagger	9	LED VIII: pl. 23
			0.261	2.820	1.500	360	5850	1550	3250	90	170	9	30			
BAMI-40	MWK.3-4	17889	0.052	0.056	2.150	1210	6900	1020	7450	30	220	3	10	blade/chisel	9	LED VIII: pl. 23
BAMI-41 *	MWK.4-2	17890	0.028	0.157	2.400	1950	9440	700	550	30	15	6	10	dagger	9, 10	LED VIII: pl. 24

No.	Excavation No. (I)	Lab. No.	Pb [%]	Sn [%]	As [%]	Sb [µg/g]	Fe [µg/g]	Ag [µg/g]	Ni [µg/g]	Bi [µg/g]	Co [µg/g]	Au [µg/g]	Zn [µg/g]	Type of object	Pl.	Final excavation reports (Luristan Exc. Documents)
BAMI-42	KN.AII.13-4	17891	0.036 0.958 0.100	0.097 0.007 0.305	1.100 0.428 1.530	310 30 450	5400 170 9540	180 1100 300	2860 70 3700	30 30 30	100 16 540	5 4 6	10 50 20	spearhead	9	LED VIII: pl. 51, 65
BAMI-43 *	KN.AII.2-2	17892	1.000	0.009	0.895	250	3830	1420	3100	30	100	4	20	axe	9, 10	LED VIII: pl. 50, 66
BAMI-44	KN.AII.6-5	17893	0.245	0.016	2.170	680	1120	1450	2270	30	70	11	10	axe	9, 10	LED VIII: pl. 52, 66
BAMI-45 *	KN.AII.13-6	17894	0.886	0.010	1.600	14600	8650	190	13200	170	390	1	10	axe	9	LED VIII: pl. 51, 67
BAMI-46	KN.AII.42-11	17895	0.062	0.100	2.300	340	11000	860	2600	30	110	5	110	pendant	9, 10	LED VIII: pl. 56, 70
BAMI-47 *	KN.AII.14-8	17896	0.056 0.105 0.116	0.095 0.026 0.027	2.340 2.060 2.450	300 300 360	10200 13300 12500	800 1230 1140	2470 2570 3050	30 210 100	100 150 160	4 31 39	10 10 10	pendant	9, 10	LED VIII: pl. 51, 70
BAMI-48	KN.AII.34-11	17897	0.075	0.047	1.380	340	3280	1220	2260	30	240	3	10	pin	9	LED VIII: pl. 54, 68
BAMI-49	KN.AII.44-2	17898	0.128	0.043	0.574	140	1100	960	2950	30	180	1	10	bracelet	9	LED VIII: pl. 56
BAMI-50	KN.AII.2-6	17899	0.080	0.036	1.450	200	10500	550	1900	30	640	5	10	vessel	9, 10	LED VIII: pl. 50, 68
BAMI-51	SD.1-9	17901	0.137	0.217	1.060	220	4200	3220	1820	30	180	1	10	dagger	11	LED VIII: pl. 76, 79
BAMI-52 *	SD.1-13	17902	0.665	0.009	1.640	430	1950	2000	2180	30	20	3	10	bracelet	11	LED VIII: pl. 76, 80
BAMI-53	SD.1-14	17903	0.188	0.009	1.760	450	9750	2300	2660	30	50	7	10	bracelet	11	LED VIII: pl. 76, 80
BAMI-54 *	SD.1-15	17904	0.859	0.008	1.620	380	2150	1920	2160	30	20	6	10	bracelet	11	LED VIII: pl. 76, 80
BAMI-55	GLG.1-10	17905	0.604	0.008	2.180	520	5420	2000	1420	50	7	2	10	blade	11	LED VIII: pl. 31-32
BAMI-56 *	GLG.1-16	17906	0.416	5.050	1.820	300	240	2920	1180	70	25	11	10	bracelet	11	LED VIII: pl. 31, 33
BAMI-57 *	GLG.1-14	17907	0.797	6.000	0.930	750	1950	600	1730	50	200	20	10	pin	11	LED VIII: pl. 31, 72, 75
BAMI-58 *	DA.2-5	17908	0.166	7.150	0.688	510	960	430	2650	50	60	22	10	bracelet (fragm.)	11	LED VIII: pl. 38

Table 2: Chemical composition and trace element contents of copper-base „Luristan“ artefacts from various Louvre collections. Samples marked in column 1 with an asterisk (*) have also been analysed for the isotopic composition

No	Inv. No Louvre	Provenance	Lab. No	Lab. No	Pb [%]	Sn [%]	As [%]	Sb [µg/g]	Fe [µg/g]
Early Dynastic III									
Louvre-1 *	AO 20 436	Coll. Coiffard	14774	4031	15.860	0.030	1.23	470	240
Louvre-2	AO 20 452	Coll. Coiffard	14775	236	0.083	0.016	6.34	900	1050
Louvre-3 *	AO 14 054	Acquired 1931	14778	232 I	0.185	0.030	1.27	690	2310
				232 II	0.200	0.061	2.08	990	2730
Louvre-4	AO 20 880	Coll. Coiffard	14779	234	3.860	0.001	8.20	27700	1050
					0.032	0.001	6.23	120	1250
Louvre-5 *	AO 20 451	Coll. Coiffard	14780	3541	0.171	0.001	4.14	910	1570
Louvre-6 *	AO 24 013	Acquired 1970	14787	3542	0.043	0.043	2.18	4510	4720
Louvre-7 *	AO 13 906	Coll. Godard	14790		10.000	0.023	2.34	4840	180
Louvre-8 *	AO 20 435	Coll. Coiffard	14792		0.006	0.018	1.51	16600	490
Louvre-9 *	AO 24 792	Coll. David-Weill	14793	3552	0.919	0.001	4.24	42000	540
					0.885	0.003	4.28	48800	230
Louvre-10 *	AO 13 916	Coll. Godard	14794		0.692	0.042	2.67	800	1830
Louvre-11	AO 20 456	Coll. Coiffard	14796		1.100	0.021	4.63	360	3080
Louvre-12 *	AO 14 056	Acquired 1931	14798		12.420	0.051	9.79	640	4690
Louvre-13 *	AO 21 635	Acquired 1960's		4028	< 0.300	0.060	5.70	2000	4400
Louvre-14 *	AO 16 603	Acquired 1931		4029 I	15.900	0.220	4.50	6700	32000
				4029 II	1.300	0.220	4.10	6000	28000
Louvre-15 *	AO 18 663	Citroën "Croisière jaune"		4030 I	1.000	0.080	4.10	5800	2900
				4030 II	1.000	< 0.060	3.70	5300	5200
Akkadian/Ur III									
Louvre-16 *	AO 11 985	Acquired 1930, Nehavend area	14753	212	0.324	15.320	0.88	1120	1770
Louvre-17 *	AO 11 986	Acquired 1930, Nehavend area	14754	213	0.003	12.060	0.34	20	1200
Louvre-18 *	AO 13 883	Coll. Godard	14755	214	1.560	0.050	5.86	660	5090
Louvre-19 *	AO 13 884	Coll. Godard	14756	215	0.466	7.000	1.98	2580	2280
Louvre-20 *	AO 13 885	Coll. Godard	14757	228	0.223	2.650	1.35	780	410
Louvre-21 *	AO 18 670	Citroën "Croisière jaune"	14759	218	15.700	0.010	3.34	180	820

of their lead. Chemical analyses by optical emission spectroscopy were performed by Drs. L. Hurtel and M. Menu at the Laboratoire de Recherche des Musées de France, Paris.

Ag [µg/g]	Ni [µg/g]	Bi [µg/g]	Co [µg/g]	Au [µg/g]	Zn [µg/g]	Type of object	Dimensions H. / L.	Pl.	Bibliography
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960	1490	70	1	12	1	mace head	15.6 / –	12	–
1810	69	70	< 1	2	50	vessel	9.8 / 12.6	12	Calmeyer 1969: 14-D.
324	1980	60	57	8	1	dagger, haft	25 / –	12	–
677	2860	60	50	15	1	, blade			
938	19800	60	82	1	1	dagger	26 / –	12	Calmeyer 1969: 18.
112	850	60	114	1	1				
1330	41	128	1	7	1	vessel	10.2 / 23.8	12	–
700	94	210	4	7	1	axe	8.8 / 15.6	12	–
1810	325	500	20	4	1	mace head	15.0 / –	13	Godard 1931: pl. XIX:58.
31	14900	111	1230	18	1	mace head	23.1 / –	13	–
6050	265	47	1	1	1	mace head	13.4 / –	13	Pope 1938: pl. E-F; Calmeyer 1969: 20, fig. 20; Amiet 1976: 8, nr. 6.
6040	158	212	1	1	1				
4750	1060	103	22	10	1	vessel	10.0 / 11.2	13	Godard 1931: pl. LXI-223; Calmeyer 1969: 12-13, Abb. 9.
2340	2500	219	132	44	5	vessel	11.4 / 21.0	13	Calmeyer 1969: 14-15, Abb. 12.
290	3460	211	444	2	3	rein ring	18.4 / 8.8	13	Dussaud 1932: 227-228, fig. 2-3; Pope 1938: pl. 26B; Calmeyer 1969: 8-9, Abb. 1; Orthmann 1975: pl. 37b; Amiet 1977: fig. 346; Braun-Holzinger 1984: nr. 112.
1100	< 2000	–	–	–	< 3000	vessel	13.0 / –	13	Calmeyer 1969: 14, nr. 5D.
800	3900	–	–	–	< 3000	dagger, haft	25.0 / –	14	Calmeyer 1969: 18, nr. 6M, Abb. 16.
400	6400	–	–	–	< 3000	, blade			
500	22000	–	–	–	< 3000	dagger, haft	28.2 / –	14	–
700	23000	–	–	–	< 3000	, blade			

39	342	600	75	2	24	axe	7.7 / 12.3	14	Dussaud 1930: 249, pl. XLII:2; Deshayes 1960: nr. 1359.
3440	380	752	70	1	1	axe	11.6 / 9.9	14	Dussaud 1930: 248, pl. XLII:1; Deshayes 1960: 167, nr. 1365.
790	680	820	16	1	1	axe	7.3 / 9.3	14	Godard 1931: pl. XV:46; Deshayes 1960: 158, nr. 1276.
1360	1350	635	106	4	1	axe	5.1 / 8.8	14	Godard 1931: pl. XV-45; Deshayes 1960: 158, nr. 1284.
772	4520	490	191	7	1	pick	7.5 / 16.5	15	Godard 1931: pl. XV-47; Deshayes 1960: nr. 1353.
136	90	1770	1	1	1	axe	8.2 / 12.2	15	Deshayes 1960: 166, nr. 1347, pl. XIX-4.

No	Inv. No Louvre	Provenance	Lab. No	Lab. No	Pb [%]	Sn [%]	As [%]	Sb [µg/g]	Fe [µg/g]
Louvre-22 *	AO 18 671	Citroën “Croisière jaune”	14760	219	0.295	13.700	1.31	190	510
Louvre-23 *	AO 20 408	Coll. Coiffard	14762	229	1.220	9.180	1.08	2750	1060
Louvre-24 *	AO 20 420	Coll. Coiffard	14764	222	0.656	13.070	0.70	290	2040
Louvre-25 *	AO 20 421	Coll. Coiffard	14765	223	13.410	0.194	0.67	120	11000
Louvre-26 *	AO 20 422	Coll. Coiffard	14766	224	0.930	10.530	0.77	240	1100
Louvre-27 *	AO 20 423	Coll. Coiffard	14767	225	1.020	10.780	1.06	1800	330
Louvre-28 *	AO 20 425	Coll. Coiffard	14768	226	0.160	10.200	0.45	130	610
Louvre-29 *	AO 24 794	Coll. David-Weill	14773	3568	0.556	13.760	1.09	60	2260
Louvre-30 *	AO 18 672	Citroën “Croisière jaune”	14784		12.400	0.025	3.01	4760	1130
Louvre-31 *	AO 20 410	Coll. Coiffard	14785		9.400	0.002	7.68	2510	5860
Louvre-32 *	AO 16 598	Contenau-Ghirshman	14791		0.217	4.070	3.55	560	6730
Louvre-33	AO 20 411	Coll. Coiffard		4038	2.370	7.890	1.26	10	2210
Early 2nd. mill. BCE									
Louvre-34 *	AO 20 394	Coll. Coiffard	14761	220	0.007	8.080	1.14	60	3380
Louvre-35 *	AO 20 417	Coll. Coiffard	14763	221	0.397	11.430	1.09	90	470
Louvre-36 *	AO 20 427	Coll. Coiffard	14769	227	0.265	3.240	0.90	40	1770
Louvre-37 *	AO 24 795	Coll. David-Weill	14770	3551	0.001	10.560	0.12	90	470
Louvre-38 *	AO 24 796	Coll. David-Weill	14771		0.510	10.370	0.75	150	1100
Louvre-39 *	AO 24 799	Coll. David-Weill	14772	3547	1.650	0.914	1.13	514	856
Louvre-40 *	AO 20 413	Coll. Coiffard	14786		0.058	11.040	2.28	140	1630
Louvre-41 *	AO 24 798	Coll. David-Weill	14789	3564	0.098	5.100	1.62	20	2410
Louvre-42	AO 16 061	Contenau-Ghirshman	14795		0.020	0.007	2.74	3560	90
Louvre-43	AO 18 686	Citroën “Croisière jaune”	14799	348	0.076	8.650	1.00	170	2240
Uncertain									
Louvre-44 *	AO 13 894	Coll. Godard	14776	230	0.221	9.520	1.44	360	1690
Louvre-45 *	AO 13 895	Coll. Godard	14777	231	0.138	0.482	3.78	850	6610
Louvre-46 *	AO 16 059	Acquired 1931		4041	< 0.300	< 0.060	4.10	1000	13000
Louvre-47	AO 25 263	Don Foroughi 1973	14782	4025	0.245	0.490	3.54	2650	2020
Louvre-48	AO 25 264	Don Foroughi 1973	14783	4026	0.136	0.007	6.94	3340	7280

Ag [μg/g]	Ni [μg/g]	Bi [μg/g]	Co [μg/g]	Au [μg/g]	Zn [μg/g]	Type of object	Dimensions H. / L.	Pl.	Bibliography
1930	1824	284	135	5	1	axe	6.8 / 9.2	15	–
1280	2200	176	1	8	1	pick	7.8 / 19.0	15	–
1840	1170	270	153	9	1	axe	5.6 / 7.9	15	–
192	1720	750	98	9	1	axe	8.5 / 12.0	15	–
2360	2040	472	81	18	9	axe	6.5 / 8.8	15	–
850	6500	260	79	18	24	axe	6.4 / 8.2	16	–
700	250	70	53	12	18	axe	4.8 / 7.9	16	–
914	1030	70	1	8	1	votive hammer	– / 13.4	16	Amiet 1976: 15, nr. 17.
518	953	20	1	6	1	pick	– / 18.6	16	–
490	214	2010	48	19	1	axe	5.7 / 14.0	16	–
5860	2540	163	111	15	8	mace head	13.5 / -	16	–
670	240	3010	6	7	1	axe	7.9 / 12.1	17	–

24	393	241	394	5	1	axe	7.0 / 12.0	17	–
217	170	300	239	90	1	axe	7.4 / 9.8	17	–
72	14	815	14	2	1	axe	6.4 / 8.4	17	–
76	48	70	32	16	1	axe	6.9 / 17.8	17	Amiet 1976: 22, nr. 23.
317	2520	70	817	16	25	axe	6.7 / 19.5	18	Pope 1938: pl. 51B; Deshayes 1960: nr. 1392, pl. XX-9; Amiet 1976: 22, nr. 24.
2300	2740	70	287	5	1	axe	8.6 / 15.0	18	Pope 1938: pl. 49A; Calmeyer 1969: 183, fig. 153; Amiet 1976: 23, nr. 29.
140	6830	60	802	9	1	axe	8.1 / 10.4	18	–
17	2700	517	623	3	15	axe	7.8 / 11.1	18	Pope 1938: 281, pl. 49B, nr. III; Amiet 1976: 23, nr. 28.
1060	94	1320	18	1	1	vessel	10.2 / 6.3	18	–
120	2870	327	634	11	20	belt buckle	8.3 / 5.9	18	Crouwel 1972: 51, fig. 2.

297	1970	70	208	11	1	dagger	23.0 / –	19	–
322	3240	60	196	5	1	dagger	21.0 / –	19	–
5400	< 2000	–	–	–	< 3000	axe	– / 12.7	19	–
505	9090	60	518	9	31	toilet article	8.8 / –	19	–
310	4210	60	170	6	1	toilet article	5.9 / –	19	–

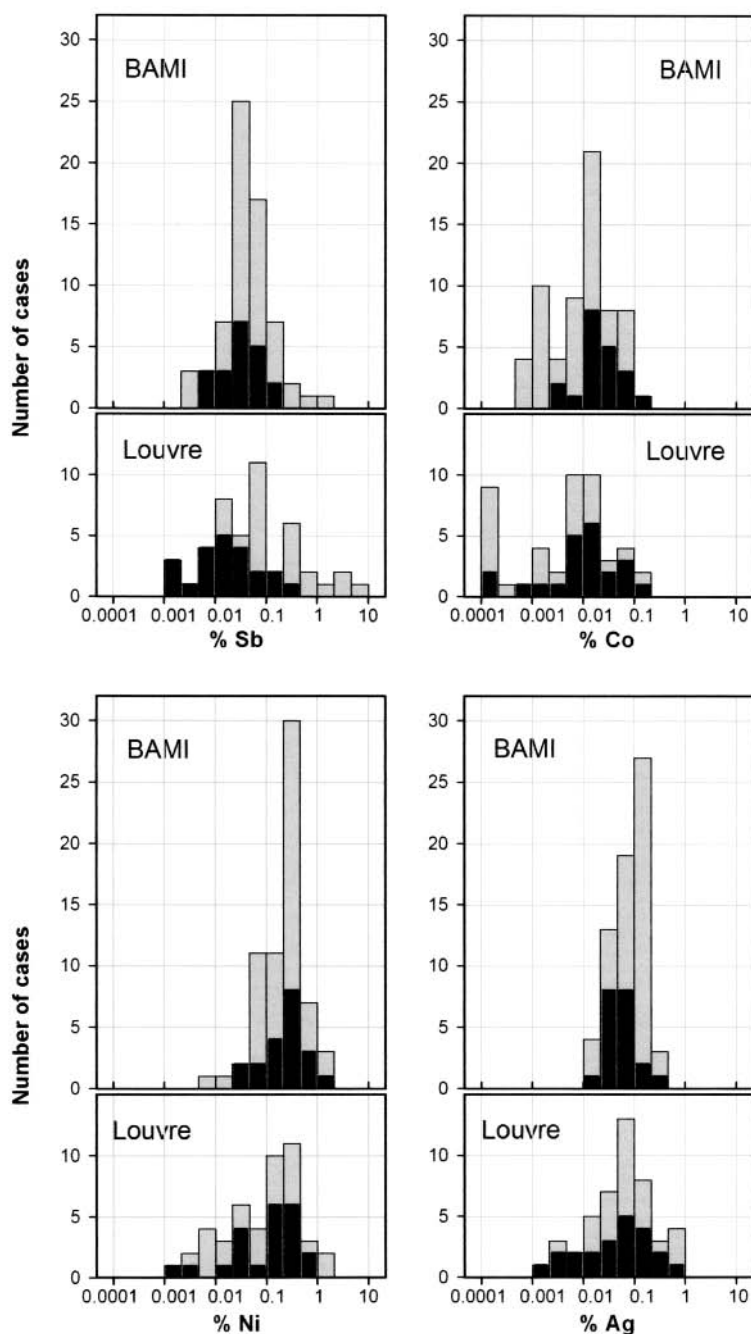


Fig. 6. Distribution of trace element concentrations [antimony (Sb), cobalt (Co), nickel (Ni) and silver (Ag)] among copper and bronze artefacts from Luristan. Samples retrieved during controlled excavations in the course of the BAMI project (upper parts in the four panels) are not significantly different from such acquired on the art market (Louvre collections), except for the subsidiary peak in the Louvre samples at around 0.0001 % Co the significance and meaning of which is not clear. Moreover, in both subsets are the distributions for the bronze objects (black bars) similar to those for the copper objects (grey bars) which suggests the bronze to have been manufactured by adding pure tin to copper as we have it in the copper objects. Judging from past experience at other Bronze Age sites this is rather the exception than the rule. (For details see text).

discussed above, all presently available data suggest in Luristan the bronze to have been made by adding tin to the low-arsenic fraction of the kind of copper as it is present in the non-bronzes. We shall come back to this problem in connection with the lead isotope results. We point out already now the implication that the tin used for alloying must have been very pure; since it can not have contributed notable amounts to any of the trace elements analysed for, it cannot have been contaminated with any of these elements.

The earliest, rather narrowly dated bronzes in our suite of objects are a bracelet (BAMI-1, Pl. 3) and a pin (BAMI-17, Pl. 5-6) from Bani Surmah together with a dagger from Mehr War Kabud (BAMI-39, Pl. 9). Although their precise age is somewhat uncertain (Table 4) they definitely are not younger than Phase III which, in Mesopotamia, runs to Late ED III/ Early Akkadian, in absolute terms about 2400/2300 BCE.

Lead Isotopy

A selection of 29 of the excavated BAMI objects (Tables 3, 4) and 40 specimens from the Louvre (Table 5) were analysed for the isotopic composition of their lead by means of thermal ionisation mass spectrometry (TIMS). For three of the daggers from the Louvre heft and blade were analysed separately. The results are presented as isotope abundance ratios relative to the abundance of ^{206}Pb .

a. Main Isotope Cluster

Almost one third of all artefacts analysed (20 out of 69) contain lead with very much the same isotopic composition (fig. 7). The cluster comprises objects from both sub-sets in our suite of samples, from the Louvre Collections as well as from the Belgian excavations. There are bronzes (13 out of 20) as well as non-bronzes and, among the bronzes, such with high tin content as well as such with low tin content. Axes and other implements are present as well as ornaments, like bracelets; and chronologically the members of the cluster date from Early Dynastic I-II to the early 2nd millennium BCE. The mean isotope abundance ratios of this group are $^{208}\text{Pb}/^{206}\text{Pb}=2.0931\pm32$, $^{207}\text{Pb}/^{206}\text{Pb}=0.8494\pm15$ and $^{204}\text{Pb}/^{206}\text{Pb}=0.05426\pm15$ where the listed “uncertainties” indicate the full range into which all ratios fall. Variations of such magnitude are well within the range observed for different ore

Table 3: Isotopic composition of lead in objects excavated in the course of the BAMI project.

Samples marked with an asterisk in column 8 belong to the Main Isotope Cluster (see text).

- (1) Initials of site: (BS = Bani Surmah, DA = Darvand, DT = Dar Tanha, GLG = Gulu-lal-i Galbi, KN = Kalleh Nisar, MWK = Mehr War Kabud, SD = Sardant), followed by “Area” (if applicable: A, B, C or AII), tomb number and number of the object in the tomb.
- (2) Metal: CuPb: Pb content above 2 %; CuAs: As content above 2%; Sn: Tin content above 1 %. Remark: the copper axe KN.AII.2-2 (BAMI-43) is made of folded sheet metal; all others shafthole axes are cast.

No.	Excavation No. (1)	Sample nos.	Object	Metal (2)	$\frac{^{208}\text{Pb}}{^{206}\text{Pb}}$	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	$\frac{^{204}\text{Pb}}{^{206}\text{Pb}}$	Plates
BAMI-11	BS.A2-2	17860	axe	Cu	2.0806	0.8393	0.05355	3, 4
BAMI-15	BS.A2-7	17864	axe	CuPbAs	2.0677	0.8290	0.05276	5
BAMI-13	BS.A2-9	17862	axe	CuPb	2.0800	0.8389	0.05346	3, 4
BAMI-1	BS.A6-32	17850	bracelet	SnPb	2.0922	0.8486	0.05428 (*)	3
BAMI-17	BS.B12-4	17866	pin	Sn	2.0948	0.8491	0.05423 (*)	5, 6
BAMI-20	KN.AI.1-4	17869	finger ring	Sn	2.0889	0.8418	0.05353	5
BAMI-25	KN.AI.2-4	17874	bracelet	Sn	2.0834	0.8430	0.05390	5
BAMI-22	KN.AI.3-2	17871	pin	Sn	2.1084	0.8700	0.05594	5, 6
BAMI-27	KN.C3-30	17876	dagger	Sn	2.0939	0.8510	0.05442	5, 6
BAMI-23	KN.AI.4-5	17872	bracelet	Sn	2.0876	0.8456	0.05395	5
BAMI-32	KN.C12-11	17881	spearhead	Sn	2.0860	0.8454	0.05395	5, 6
BAMI-30	KN.C13-31	17879	pin	Cu	2.0903	0.8519	0.05453	5
BAMI-31	KN.C13-33	17880	pin	Sn	2.0873	0.8449	0.05402	5
BAMI-28	KN.C13-79	17877	finger ring	Cu	2.1217	0.8746	0.05589	5
BAMI-39	MWK.3-1	17888	dagger	Sn	2.0920	0.8497	0.05422 (*)	9
BAMI-41	MWK.4-2	17890	dagger	CuAs	2.0780	0.8378	0.05345	9, 10
BAMI-38	DT.1-2	17887	axe	CuAs	2.0849	0.8433	0.05389	7, 8
BAMI-33	DT.1-8	17882	dagger	CuAs	2.0886	0.8450	0.05400	7, 8
BAMI-37	DT.1-12	17886	dagger	CuAs	2.0879	0.8437	0.05387	7, 8
BAMI-36	DT.1-17	17885	belt buckle	CuPbAs	2.0727	0.8338	0.05319	7, 8
BAMI-34	DT.1-18	17883	bracelet	Cu	2.0806	0.8418	0.05369	7, 8
BAMI-58	DA.2-5	17908	bracelet	Sn	2.1071	0.8635	0.05511	11
BAMI-43	KN.AII.2-2	17892	axe	Cu	2.1145	0.8663	0.05528	9, 10
BAMI-45	KN.AII.13-6	17894	axe	Cu	2.0796	0.8392	0.05352	9
BAMI-47	KN.AII.14-8	17896	pendant	CuAs	2.0732	0.8362	0.05341	9, 10
BAMI-57	GLG.1-14	17907	pin	Sn	2.0930	0.8486	0.05420 (*)	11
BAMI-56	GLG.1-16	17906	bracelet	Sn	2.0736	0.8376	0.05350	11
BAMI-52	SD.1-13	17902	bracelet	Cu	2.1048	0.8590	0.05483	11
BAMI-54	SD.1-15	17904	bracelet	Cu	2.1057	0.8589	0.05478	11

Table 4

		3100	3000	2900	2800	2700	2600	2500	2400	2300	2200	2100	2000	1900	1800	1700
Zone	BAMI-nr. Sn >1%	grave number	Djemdet Nasr	E.D. I	ED II	ED III		Akkad	Guti	Ur III	Isin-Larsa / Old Bab.					
			Phase I	Phase II		Phase III		Phase IV		Middle Bronze						
I	BAMI-11	BS.A2-2														
	BAMI-15	BS.A2-7														
	BAMI-13	BS.A2-9														
	BAMI-1	BS.A6-32														
	BAMI-17	BS.B12-4														
	BAMI-20	KN.AI.1-4														
	BAMI-25	KN.AI.2-4														
	BAMI-22	KN.AI.3-2														
	BAMI-27	KN.C3-30														
	BAMI-23	KN.AI.4-5			?		?		?							
	BAMI-32	KN.C12-11														
	BAMI-30	KN.C13-31														
	BAMI-31	KN.C13-33														
	BAMI-28	KN.C13-79														
	BAMI-39	MWK.3-1														
BAMI-41	MWK.4-2															
III	BAMI-38	DT.1-2					?									
	BAMI-33	DT.1-8					?									
	BAMI-37	DT.1-12					?									
	BAMI-36	DT.1-17					?									
	BAMI-34	DT.1-18														
I	BAMI-58	D.2-5														
	BAMI-43	KN.AII.2-2														
	BAMI-45	KN.AII.13-6														
	BAMI-47	KN.AII.14-8														
	BAMI-57	GLG.1-14														
	BAMI-56	GLG.1-16														
	BAMI-52	SD.1-13														
BAMI-54	SD.1-15															

specimens from a single occurrence³; we therefore suggest that a single ore deposit has supplied, over an extended period of time, a good fraction of the copper utilized in Luristan. The conclusion has to be qualified, however, because a fair number of the artefacts belonging to this isotope group is lead-rich. According to the criterion that copper with a lead content of 2 %

³ Isotope abundance ratios among ores from a single occurrence may vary within wide limits, in special instances up to several percent; in the vast majority of cases the spread is less than ± 0.4 % (see, e.g., Begemann & Schmitt-Strecker 2007: fig. 2). This undeterminedness has to be taken into account when looking for ores that “match” the isotopic composition of the lead in an artefact.

Table 5: Lead isotopic composition of “Luristan” artefacts acquired on the art market and now in the Louvre, Paris. Samples marked with an asterisk belong to the Main Isotope Cluster (see text).

(#) CuPb: Pb content above 2 %; CuAs: As content above 2 %; Sn: Tin content above 1 %.

No.	Sample numbers		Inv. No. Louvre	Object	Metal (#)	²⁰⁸ Pb ²⁰⁶ Pb	²⁰⁷ Pb ²⁰⁶ Pb	²⁰⁴ Pb ²⁰⁶ Pb	Plates
Early Dynastic III									
Louvre-1	14 774	4031	AO 20 436	mace head	CuPb	2.0947	0.8460	0.05404	12
Louvre-3	14 778 I	232 I	AO 14 054	dagger, haft	Cu	2.0826	0.8398	0.05349	12
	14 778 II	232 II		, blade	CuAs	2.0801	0.8382	0.05337	
Louvre-5	14 780	3541	AO 20 451	vessel	CuAs	2.0856	0.8444	0.05399	12
Louvre-6	14 787	3542	AO 24 013	axe	CuAs	2.0834	0.8418	0.05372	12
Louvre-7	14 790		AO 13 906	mace head	CuPbAs	2.0949	0.8468	0.05403	13
Louvre-8	14 792		AO 20 435	mace head	Cu	2.0794	0.8398	0.05358	13
Louvre-9	14 793	3552	AO 24 792	mace head	CuAs	2.0840	0.8454	0.05390	13
Louvre-10	14 794		AO 13 916	vessel	CuAs	2.0869	0.8436	0.05385	13
Louvre-12	14 798		AO 14 056	rein ring	CuPbAs	2.0760	0.8375	0.05357	13
Louvre-13		4028	AO 21 635	vessel	CuAs	2.0749	0.8371	0.05327	13
Louvre-14		4029 I	AO 16 603	dagger, haft	CuPbAs	2.0963	0.8500	0.05429 *)	14
		4029 II		, blade	CuAs	2.0947	0.8475	0.05412	
Louvre-15		4030 I	AO 18 663	dagger, haft	CuAs	2.0941	0.8492	0.05424 *)	14
		4030 II		, blade	CuAs	2.0940	0.8495	0.05429 *)	
Akkadian/ Ur III									
Louvre-16	14 753	212	AO 11 985	axe	Sn	2.0813	0.8419	0.05392	14
Louvre-17	14 754	213	AO 11 986	axe	Sn	2.0821	0.8525	0.05435	14
Louvre-18	14 755	214	AO 13 883	axe	CuAs	2.0933	0.8500	0.05428 *)	14
Louvre-19	14 756	215	AO 13 884	axe	Sn	2.0945	0.8503	0.05430 *)	14
Louvre-20	14 757	228	AO 13 885	pick	Sn	2.1110	0.8650	0.05530	15
Louvre-21	14 759	218	AO 18 670	axe	CuPbAs	2.0913	0.8497	0.05440 *)	15
Louvre-22	14 760	219	AO 18 671	axe	Sn	2.0927	0.8494	0.05425 *)	15
Louvre-23	14 762	229	AO 20 408	pick	Sn	2.1020	0.8533	0.05441	15
Louvre-24	14 764	222	AO 20 420	axe	Sn	2.0920	0.8488	0.05422 *)	15
Louvre-25	14 765	223	AO 20 421	axe	CuPb	2.0922	0.8498	0.05430 *)	15
Louvre-26	14 766	224	AO 20 422	axe	Sn	2.0828	0.8440	0.05401	15
Louvre-27	14 767	225	AO 20 423	axe	Sn	2.0763	0.8367	0.05343	16
Louvre-28	14 768	226	AO 20 425	axe	Sn	2.0932	0.8482	0.05416 *)	16
Louvre-29	14 773	3568	AO 24 794	votive hammer	Sn	2.0912	0.8486	0.05414 *)	16
Louvre-30	14 784		AO 18 672	pick	CuPbAs	2.0928	0.8501	0.05427 *)	16
Louvre-31	14 785		AO 20 410	axe	CuPbAs	2.0916	0.8499	0.05422 *)	16
Louvre-32	14 791		AO 16 598	mace head	SnAs	2.1050	0.8604	0.05507	16

No.	Sample numbers		Inv. No. Louvre	Object	Metal (#)	²⁰⁸ Pb ²⁰⁶ Pb	²⁰⁷ Pb ²⁰⁶ Pb	²⁰⁴ Pb ²⁰⁶ Pb	Plates
Early 2. mill. BCE									
Louvre-34	14 761	220	AO 20 394	axe	Sn	2.0776	0.8391	0.05345	17
Louvre-35	14 763	221	AO 20 417	axe	Sn	2.0831	0.8426	0.05381	17
Louvre-36	14 769	227	AO 20 427	axe	Sn	2.0928	0.8488	0.05419 *)	17
Louvre-37	14 770	3551	AO 24 795	axe	Sn	2.0910	0.8495	0.05440 *)	17
Louvre-38	14 771		AO 24 796	axe	Sn	2.1127	0.8765	0.05652	18
Louvre-39	14 772	3547	AO 24 799	axe	Cu	2.0819	0.8407	0.05361	18
Louvre-40	14 786		AO 20 413	axe	SnAs	2.0901	0.8464	0.05413	18
Louvre-41	14 789	3564	AO 24 798	axe	Sn	2.0953	0.8494	0.05425 *)	18
Uncertain									
Louvre-44	14 776	230	AO 13 894	dagger	Sn	2.1073	0.8622	0.05513	19
Louvre-45	14 777	231	AO 13 895	dagger	CuAs	2.1090	0.8628	0.05503	19
Louvre-46		4041	AO 16 059	axe	Cu	2.0776	0.8391	0.05359	19

or more is an intentional alloy there are six such alloys in the Main Isotope Cluster. For these the lead isotope signature characterises the *lead* ores from which the lead derives, not the lead as it will have been associated with the copper ores. Moreover, the suggestion that a single ore occurrence, whether one of copper or lead, had supplied this metal is not compelling. The possibility cannot be excluded, e.g., that there are several different ore deposits with the same isotopic fingerprint which then were exploited consecutively. And such constancy in the lead isotopic composition and the trace element contents one expects also if the artefacts in question were a single batch of counterfeit objects!

Another observation worthy of comment is that 13 of the 20 artefacts in the Main Isotope Cluster are (tin)bronzes. For them to be indistinguishable isotopically from the copper objects suggests that this bronze was made by adding tin to the kind of copper as it is present in the local copper (and arsenical copper) objects. This point is not trivial. Indeed, previous experience, at Poliochni on Lemnos (Pernicka et al. 1990), in Bulgaria (Pernicka et al. 1997), at Beşiktepe (Troia) (Begemann et al. 2003) and in the western Balkans (Schmitt-Strecker & Begemann 2005), tended to show the opposite in that the bronze out of which local artefacts are made can *not* have been manufactured by alloying tin with the kind of copper as it is present in the local contemporaneous objects made of unalloyed copper. In the present instance, as mentioned already, the isotope

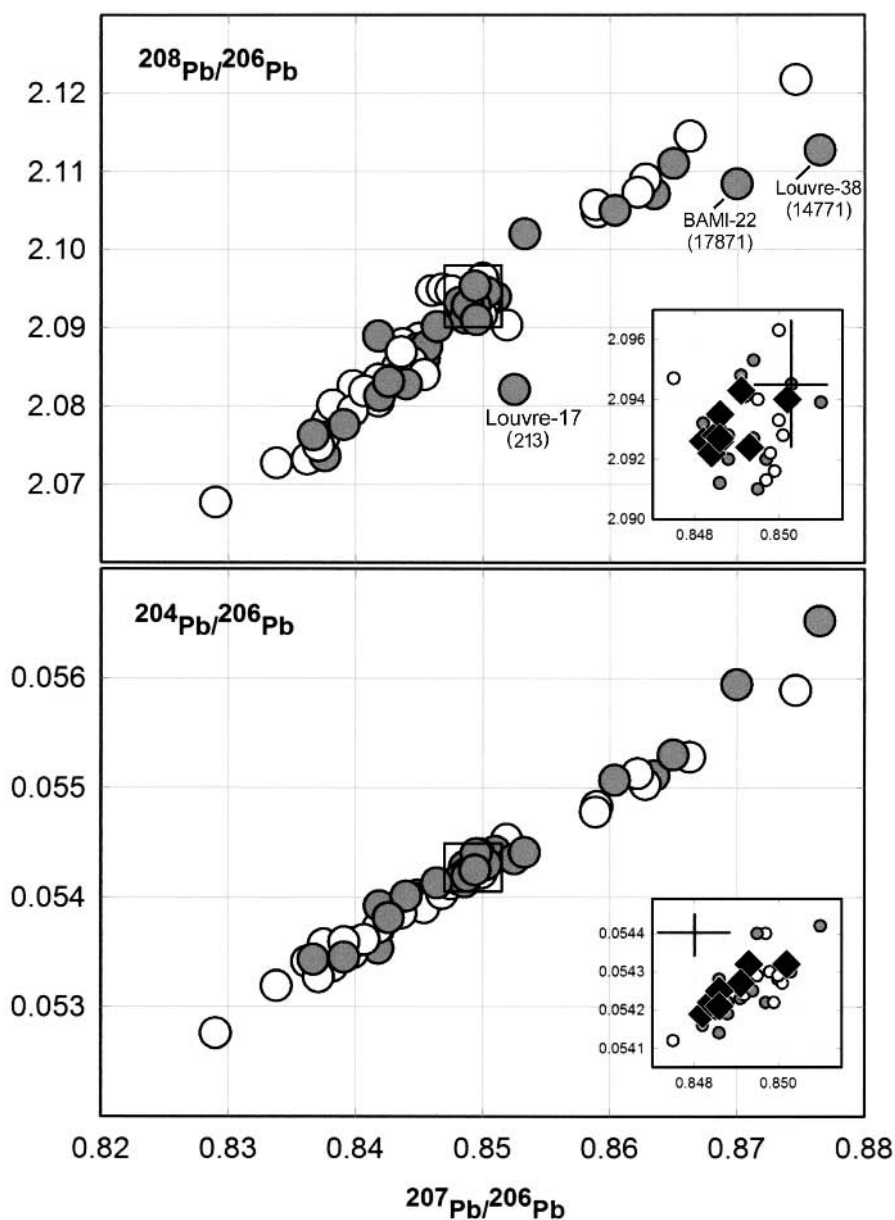


Fig. 7. Three-isotope plots of the lead isotopic composition in Luristan copper-base artefacts [Open symbols: Cu, CuAs, CuPb; grey: CuSn (bronze)]. The inserts are enlargements from the main diagram showing the data for a group of 20 objects with very similar isotopy (Main Isotope Cluster, see text). Also shown in the inserts, as diamonds, are the isotopic compositions of lead in copper ores from occurrences at Ahangaran, at Shamsabad and Deh Hosein south-west of Arak, some 250 km NE of Luristan, which qualify as potential sources of the metal. The crosses in the inserts mark the experimental uncertainties associated with the mass spectrometric determination of the isotope abundance ratios which are $\pm 0.1\%$ on the 96 % confidence level.

evidence for a common source of the copper in the bronzes and the non-bronzes is supported by the chemical data.

The nearest ore occurrences with lead matching the isotopic composition of the Main Isotope Cluster are known from Ahangaran (2.0940; 0.8502; 0.05432) and from Shamsabad (2.0924; 0.8493; 0.05432), west and south-west of present-day Arak, respectively. (For a summary of all potential ore sources see fig. 13). While these mineralisations primarily are of lead/zinc and iron, respectively, at both sites copper ores are sufficiently abundant to have filled the need of prehistoric people for a long time. A further occurrence with matching lead isotope signature has recently been reported to exist at Deh Hosein, near Shamsabad (Momenzadeh et al. 2002; Nezafati et al. 2006). At present, the deposit is of no commercial importance - Deh Hosein is not among the 532 sites listed in the official Mineral Distribution Map of Iran published by the Geological Survey of Iran and containing all information available up to 1974 — but the authors report prehistoric mining activities to have left behind “huge waste dumps”, dating to the first half of the 2nd millennium BCE, at least (Nezafati et al. 2006). What makes this mining site particularly exciting is the occurrence of copper ores together with ores of arsenic and of tin so that this single site could have supplied the starting material for the arsenical copper as well as for the bronze of the artefacts in the Main Isotope Cluster. Indeed, Nezafati et al. (2006) suggest Deh Hosein as a possible source for the tin in Luristan bronze.

The polymetallic mineralisations at Deh Hosein occur in veins and vein-lets as well as disseminated in meta-sedimentary rocks (Nezafati et al. 2006). The chemical composition of pieces of these ores is quite variable, depending on the relative proportions of the various kinds of ore minerals present. Without careful separation and selection of one kind of ore or the other the metal smelted from such mixtures will show a range in chemical compositions distributed around some average value. This is exactly what is being observed for the arsenic content of the copper and bronze artefacts from the Main Isotope Cluster, with their putative provenance from Deh Hosein, which shows a single-mode distribution between 0.1 % and ca. 8 % of arsenic (fig. 8, upper panel). For tin, however, the situation is different. In the non-bronzes its concentration ranges between 20 and 2200 microgram per gram and thus is ten times lower, at least, than the lowest tin content of any of the bronzes (fig. 8, lower panel). Such a distinct bimodal distribution is contrary to what one expects to result from the indiscriminate smelting of polymetallic ores, whether from Deh Hosein or

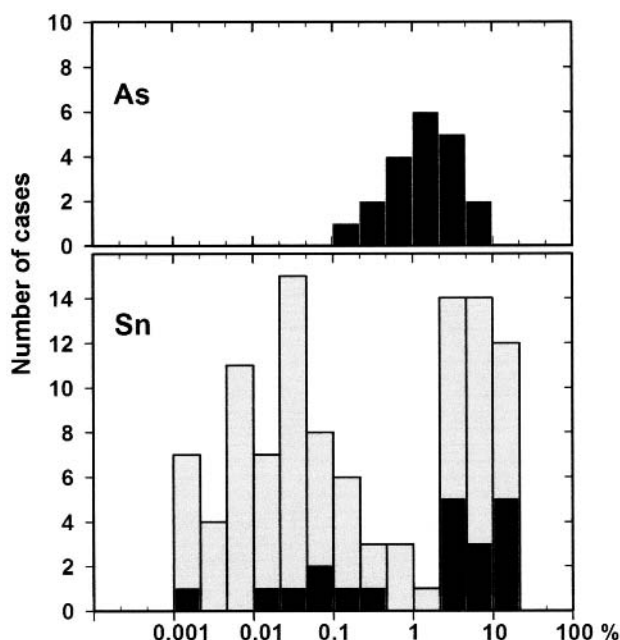


Fig. 8. The tin content of copper-base artefacts from Luristan exhibits, on a logarithmic scale, a distinct bi-modal distribution as it is expected if the bronzes are deliberate copper-tin alloys (lower panel). If extensive remelting has occurred, copper and bronze scrap must have been carefully kept apart and been processed separately. Note that objects belonging to the Main Isotope Cluster (marked in black) show the same separation into two well-distinct groups. Since the lead isotope evidence suggests that the bronze objects in this group might derive from “local” copper and tin ores from the same occurrence (in the eastern part of the central Zagros Mountains) the two kinds of ores must have been well-separated during all stages of mining and smelting. The opposite is observed for the arsenic contents in the same objects (upper panel); they exhibit the single-mode distribution as it results from indiscriminate co-smelting of arsenic ores and copper ores.

any other occurrence where the respective ores are closely associated with one another. The distribution rather implies that tin ores were separated effectively from all others and were kept separate during all steps of smelting and manufacturing of the artefacts. It will be interesting to see whether future work at Deh Hosein will bring to light any evidence for a beneficiation of the ores with respect to their tin minerals. Of course, nature itself might have taken care of such an enrichment by weathering tin ores and concentrating the cassiterite in creeks or rivers, fed by run-off from the Deh Hosein ore field, from where the tin ores were then recovered and utilized

for alloying. But independent of whether the technical feasibility existed for a beneficiation of the ores or whether one relied on nature to have done this, there is no obvious reason why one should have wanted to keep all but traces of tin out of the copper and arsenical copper.

Unfortunately, the assignment of the Main Isotope Cluster to nearby ore occurrences is not unique. There are other deposits with isotopically very similar lead which also qualify as potential sources for the metal. While none of them fits quite as well as do the sources from near Arak the variations in the isotopic signature usually encountered among different samples from the same ore occurrence nevertheless makes them viable candidates. Of these, the ores from Anatolia, at Kayabasi Köyü, Küre and Madenli/Çayeli near the Black Sea coast (Seeliger et al. 1985; Wagner et al. 1989), can presumably be ignored. Although the latter two occurrences are reported to have been exploited in prehistoric times (Wagner & Öztunalı 2000) they pose the same problems as all Anatolian copper ores in that their arsenic content is way too low. The other isotopically matching sources, at Shaïda, in Western Afghanistan southwest of Herat, as well as several occurrences in the Northern Caucasus (Artanskoje, Belokanskoje, Sadon), are possibly different in this respect. We are not aware, however, of any systematic investigation of these ores for the minor and accessory minerals they are associated with so that, for the time being, it is not clear whether the concentrations of minor and trace elements in copper smelted from these ores would match the concentrations observed in the artefacts.

b. Ratios lower than Main Isotope Cluster

There are 36 objects with ^{206}Pb -normalized abundance ratios falling to the lower left of the main cluster in both partial presentations of fig. 7. Among them are again all kinds of metal, bronzes and non-bronzes, lead-poor objects and lead-rich CuPb alloys. A clustering is not apparent (fig. 9), neither according to the type of metal the artefacts are made of nor according to their antiquity. Potential sources of copper and lead with matching isotope abundance ratios exist on the Central Iranian Plateau (fig. 13) at Vesh-noveh, halfway between Kashan and Qom, at occurrences another 250 km further to the south-east in the mining district of Anarak (Baghorq, Chah-mileh, Khuni, Nakhlak) and, for the Early Dynastic belt buckle from Dar Tanha (BAMI-36 = Lab. No. 17 885), at Bezarak/Bozaruk in the Hindu-kush Mountains of East Afghanistan. (Isotope data are from own unpub-

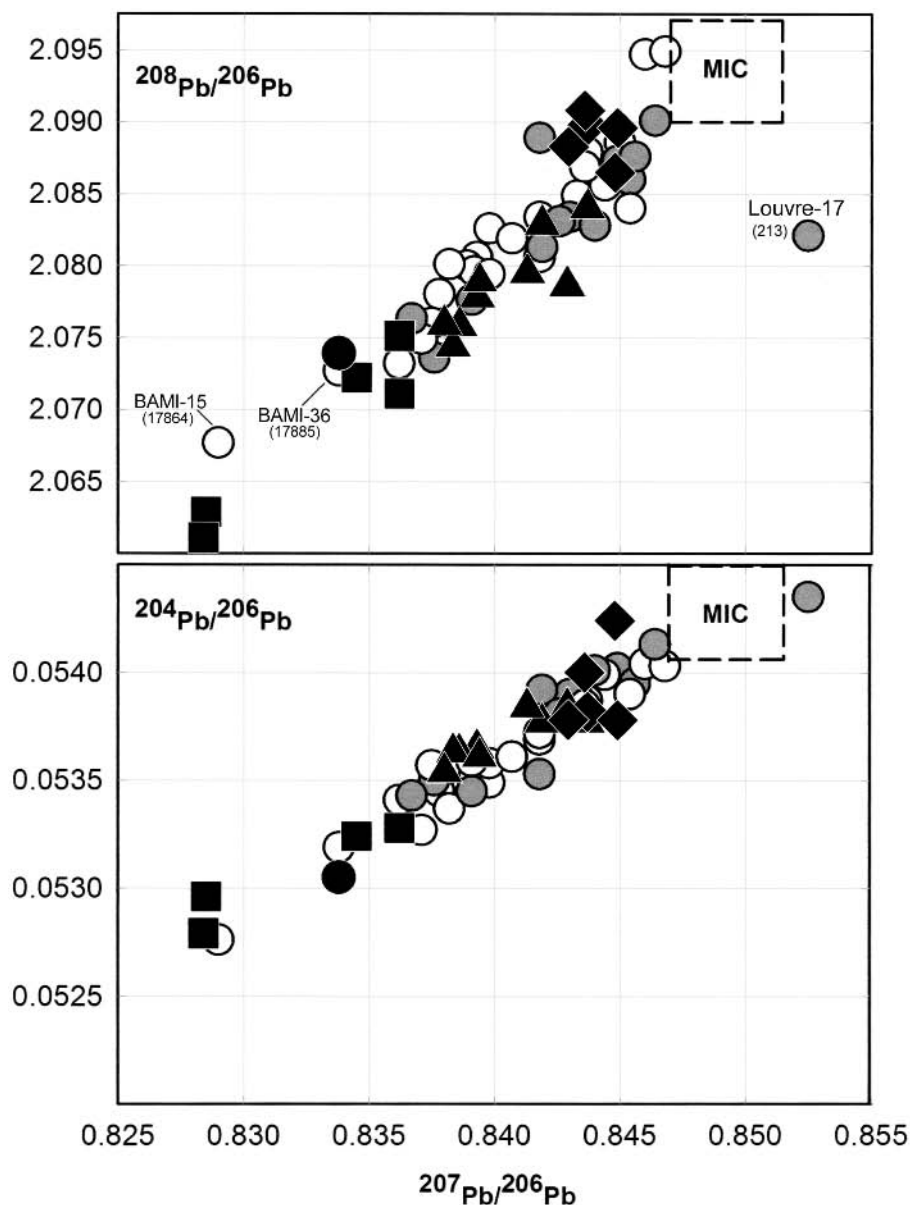


Fig. 9. Lower-left part of fig. 7. Plotted also, as black symbols, are ore data from Veshnoveh/Karkas (▲), Anarak (◆), Ergani/Mamlis (■), and Bozaruk/Bezarak (Hindukush) (●) which are potential sources for the metal. Experimental uncertainties are about the size of the symbols. The boxes to the upper right marked MIC show the narrow field populated by the 20 objects of the Main Isotope Cluster. (For details see text).

lished measurements and from Pernicka et al. 2006). Together, the mineralisations from these districts cover all but two of the artefacts (fig. 9). As is evident from fig. 9 the copper ores from Anarak (upper right) fit only a minor portion of the objects. The suggestion of Pigott (1999: 113) that during the Neolithic and Chalcolithic on the Iranian Plateau the arsenic-rich copper deposits at Anarak should have supplied the metal “perhaps to the exclusion of other available deposits” clearly does not apply to Luristan towards the end of the 3rd millennium BCE.

The two exceptions not covered by ores from the Iranian Plateau and Afghanistan are an arsenic-rich (2.5 % As) axe from Bani Surmah (BAMI-15 = Lab. No. 17864) and a bronze axe from the Louvre collections (Louvre-17 = Lab. No. 213). Of these, the latter is a “chemical maverick” also, with extremely low contents of antimony (20 µg/g) and lead (30 µg/g), combined with a very high silver content of 0.34 %. What makes its isotopic fingerprint so exceptional is evident from the top panel of fig. 7 where the data point plots way below the general trend line as it is defined by the other samples. The reason for this deviation is a deficit, relative to ²⁰⁶Pb, in these samples, of ²⁰⁸Pb which is the decay product of thorium. Apparently, (part of) the radiogenic lead in these objects was produced in an environment with a lower — than — normal thorium/uranium ratio, most likely within the ore(s) that served as source of the metal.

The axe from Bani Surmah (BAMI-15 = Lab. No. 17864), on the other hand, is one of three axes from the same grave which is quite unobtrusive as far as its contents of minor and trace elements is concerned. The lead isotope abundances make it fall at the extreme lower left in fig. 9. Copper ores and slags with matching isotopy exist at Ergani and Mamlis in Eastern Anatolia (Seeliger et al. 1985; Wagner et al. 1989) and in the Bolgardağ valley of the Central Taurus (Yener et al. 1991) but for all of them there is again the problem of the missing arsenic in these ores which, in the present instance, is aggravated by the fact that the axe is made of *arsenical* copper.

c. Ratios higher than Main Isotope Cluster

The remaining 12 artefacts plot to the upper right from the Main Isotope Cluster (fig. 10). Notably absent from this group are objects unambiguously older than Phase IV, i. e., older than Akkadian/Ur III. Apparently, new

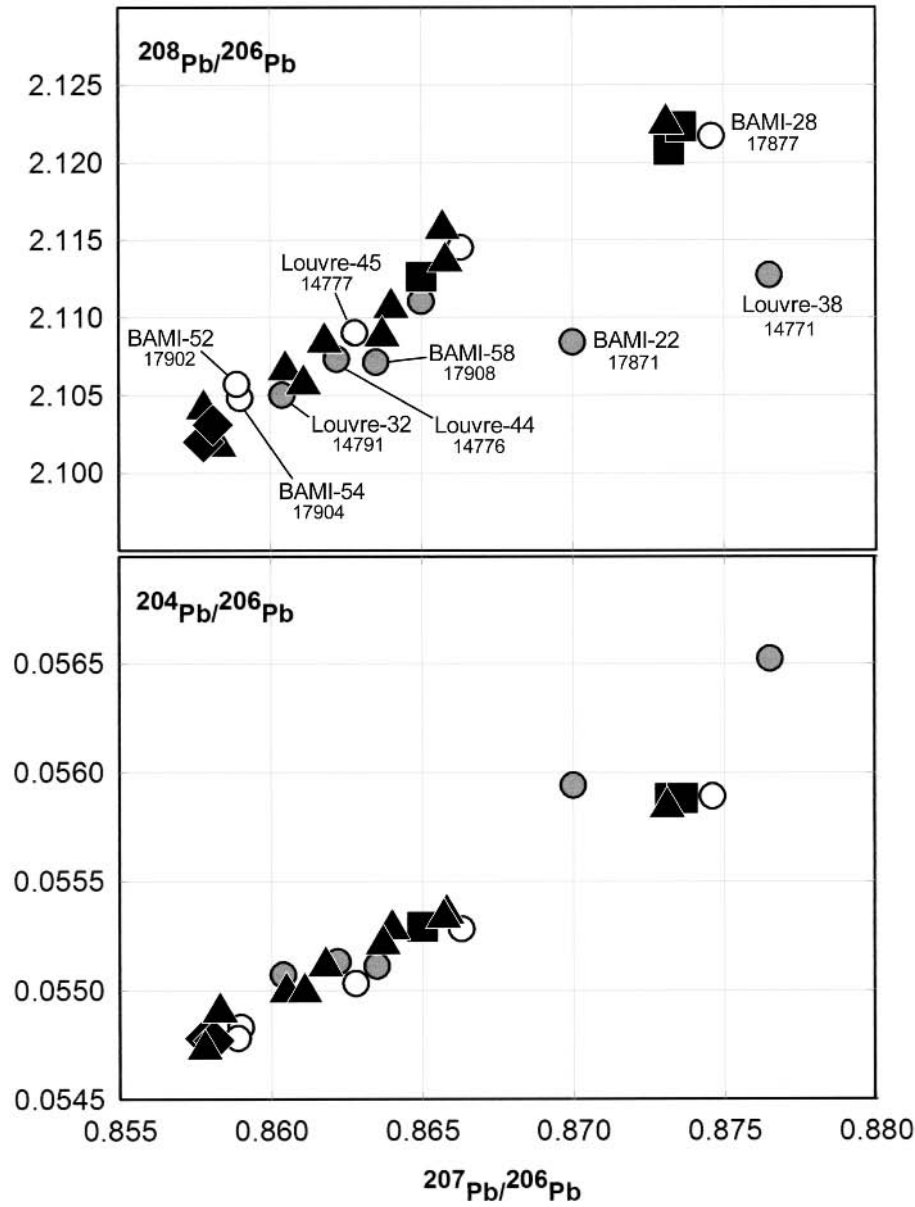


Fig. 10. Upper-right part of fig. 7 together with isotopically matching ores. Mushiston, Tadzhikistan (◆), Anatolia (■), Timna, Israel (▲).

sources of copper became available in Luristan towards the end of the 3rd millennium BCE. Interestingly, the high ratios again are not restricted to any one kind of metal; seven of the artefacts are bronzes and five are unalloyed copper. Of the latter, two copper bracelets from grave 1 at Sardant (BAMI-52 = Lab. No. 17 902; BAMI-54 = Lab. No. 17 904) are indistinguishable from one another in their lead isotopy. Since they also have virtually identical contents of trace elements there can be no reasonable doubt that their copper derives from the same ore occurrence. Actually, considering their dimensions they most likely derive from a single copper rod from the same furnace charge. Potential source ores for copper with such an isotopic fingerprint, and also for a bronze mace head from the Louvre collections (Louvre-32 = Lab. No. 14 791, Pl. 16), exist at Mušiston, Tadžikistan. This is a particularly intriguing possibility since, like Deh Hosein in Western Iran, it is also a copper/*tin* occurrence with clear evidence for prehistoric exploitation (Alimov et al. 1998).

Another triplet of objects where all isotope abundance ratios agree well within the experimental uncertainties of ± 0.1 % (96 % confidence level) are an (excavated) fragment of a bronze bracelet from Darvand A (7.1 % Sn; BAMI-58 = Lab. No. 17 908, Pl. 11) and two daggers from the Louvre — one made from bronze with 9.5 % tin (Louvre-44 = Lab. No. 14 776, Pl. 19) and another made from arsenical copper (3.8 % As; Louvre-45, Lab. No. 14 777, Pl. 19). For them we know of no nearby copper ores with a matching isotope signature that might have served as source of this copper. The nearest such ores exist at Timna, south of the Dead Sea on the western side of the Arabah rift valley in present-day Israel (Gale et al. 1990; Hauptmann 2000). We mention this just for the sake of completeness, not to suggest such a provenance to be a likely possibility. Presumably, the apparent lack of more plausible candidate occurrences simply reflects the incomplete coverage of closer-by regions as far as the characterisation of their copper ores by the isotopic composition of their lead is concerned.

The artefact in the present study with the highest $^{208}\text{Pb}/^{206}\text{Pb}$ abundance ratio is a small copper ring from Kalleh Nisar (BAMI-28 = Lab. No. 17 877, Pl. 5). Its copper possibly derived from occurrences at Horzum in the Bolgardağ mountains of the Eastern Taurids (Hirao et al. 1995; Wagner et al. 2003). And finally there are two objects that contain lead with isotopic compositions that have not (yet) been encountered in any of the ores and artefacts analysed so far. The objects are made of bronze, Lab. No. 14771 is an axe from the Louvre collections (Louvre-38, Pl. 18) and Lab. No. 17871 is

an unobtrusive pin from Kalleh Nisar (BAMI-22, Pl. 5, 6). In both cases the data points plot off the trend lines determined by the other samples so that the abundance ratios cannot be explained as a mixture of two or more of the “normal” compositions as they occur in the other samples⁴. The deviation from the general trend is most pronounced in the upper panel of figs. 7 and 10; it is the same as discussed above for another bronze axe from the Louvre (Louvre-17, Lab. No. 213, Pl. 14) in that there is again a deficit of ²⁰⁸Pb from the radioactive decay of thorium or, alternatively, an excess of ²⁰⁶Pb from the decay of uranium. The provenance of such lead is completely enigmatic at present which serves as a reminder that as far as the isotopic and chemical analyses of copper ores are concerned the coverage of most regions in the Near East is spotty at best.

Discussion

In the material features like minor and trace element contents and the isotopic composition of their lead we see no significant differences between the group of excavated objects and the suite of artefacts acquired on the art market. These data leave no room for doubt that the acquired objects should be made of genuine Luristan copper and bronze. But, of course, the data cannot contribute to the question whether simple shapes or scrap metal have been recast, at possibly very recent times, into the intricate, much higher-valued true objects of art as we have them today.

We also see no difference in the material features between the (excavated) objects from the Pish-i Kuh-related “zone III” and the remainder of the excavated specimens from the Mesopotamia-related “zone I” (fig.1). The cultural orientation does not seem to be reflected in the material the objects are made of although, admittedly, one wishes the number of objects to be larger in order to make this conclusion more significant.

A comparison of the present Luristan lead isotope data to those obtained on contemporaneous objects from Mesopotamia (Begemann & Schmitt-Strecker 2008) shows the range in abundance ratios to be considerably

⁴ In presentations of the lead isotope data as chosen here two-component mixtures of lead always fall on the tie line connecting the two end members; if three or more different types of lead are mixed together the resulting mixture falls inside the polygon defined by the respective end members.

wider in Mesopotamia. As an illustration of this point we have chosen, in fig. 11, the $^{207}\text{Pb}/^{206}\text{Pb}$ ratios, but the same is true for all other abundance ratios as well. To the extent that a variety in abundance ratios reflects a

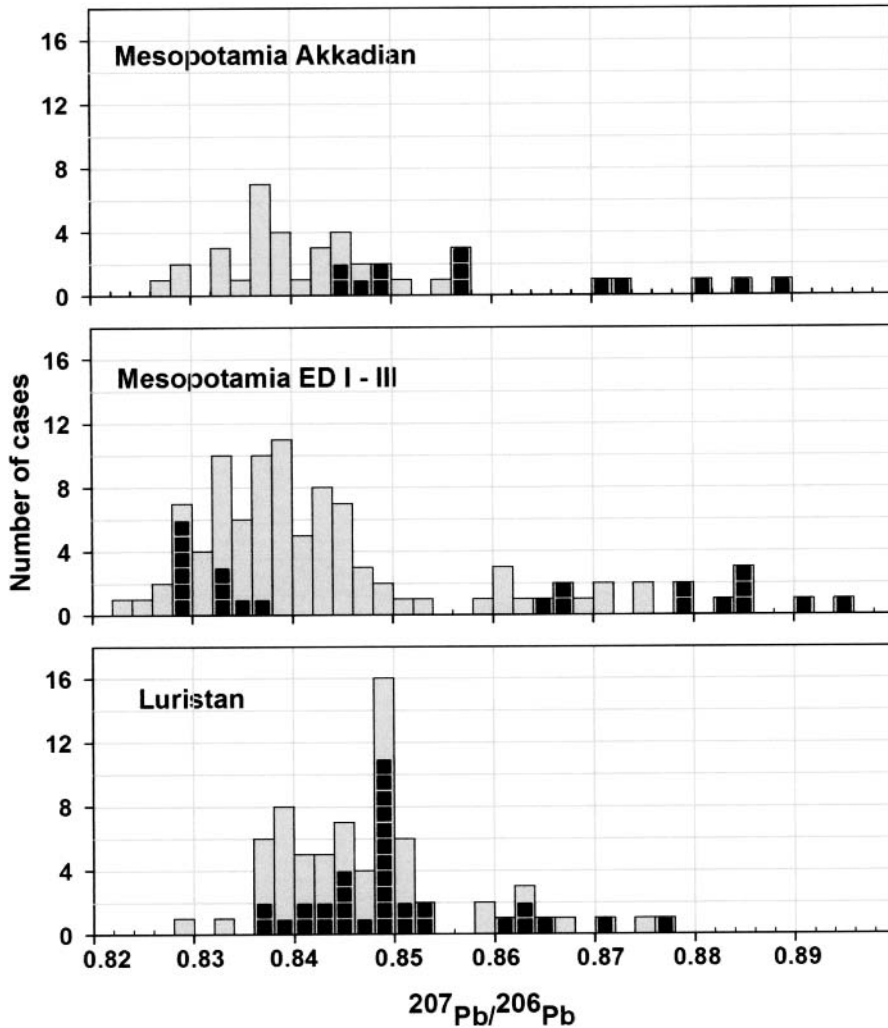


Fig. 11. The prominent peak in the distribution of $^{207}\text{Pb}/^{206}\text{Pb}$ abundance ratios at around 0.850 observed in copper-base artefacts from Luristan (lower panel) is almost completely absent in contemporary Mesopotamia. Since the peak is due entirely to objects from the

Main Isotope Cluster which arguably owe their metal to “local” ores, such ores apparently did not reach Mesopotamia. Vice versa, bronzes (filled symbols) with high $^{207}\text{Pb}/^{206}\text{Pb}$ ratios ≥ 0.878 did not reach Luristan.

variety of sources Mesopotamia received its copper and bronze from a wider variety of sources than did Luristan — a result which, surely, is no real surprise.

In detail the frequency distributions for Luristan and Mesopotamia are different in two important respects. First, the pronounced maximum in Luristan at $^{207}\text{Pb}/^{206}\text{Pb}$ values of around 0.850 (lower panel) coincides with an equally pronounced minimum in the distribution curve at the same value in Mesopotamia. Since, in Luristan, this maximum is defined by objects belonging to the Main Isotope Cluster this kind of lead is obviously missing from among the artefacts from Mesopotamia. Recalling the assignment of this isotope signature to copper occurrences near present-day Arak, and to the copper/arsenic/tin ores from Deh Hosein in particular, we suggest that ores from these occurrences in the eastern part of the Central Zagros Mountains were quite important providers for Luristan but did not play any visible role in the Mesopotamian lowlands.

The second important distinction concerns the isotopic composition of lead in bronzes. Among the 33 Luristan bronze objects analysed there is not a single one with a $^{207}\text{Pb}/^{206}\text{Pb}$ ratio higher than 0.878 (fig. 11). In ED III-Mesopotamia, on the other hand, such cases are known from Hafagi, north-east of present-day Baghdad, and from the Royal Cemetery of Ur; from the Akkadian period we know one such bronze each from Gawra in the North, from Nippur, and from Ur in the South. The provenance of lead with such high abundance ratios is still obscure, independent of whether the lead is assumed to have been associated with the tin used for alloying, or to have been carried with the copper. And, as mentioned above, assuming the lead to be a mixture of two components does not solve the problem but rather aggravates it because, in this case, one of the putative components would have to have been even more extreme in its isotopic composition than the mixture.

Based on the presently available data the most plausible source region seems, to us, to be southern Rajasthan/northern Gujarat from where isotopically matching ores have been reported by Ericson & Shirahata (1985) and by Srinivasan (1999). Moreover, it is a region where “copper and tin ores occur in proximity” (Hedge 1978: 42; Chakrabarti 1979: 63) so that the necessary ingredients for making bronze with the right lead isotope fingerprint are available. Presumably, this bronze will have reached Mesopotamia by sea via Dilmun/Bahrein in the Persian Gulf (see, e. g., Muhly 1995; Muhly and Stech 2003) possibly leaving traces

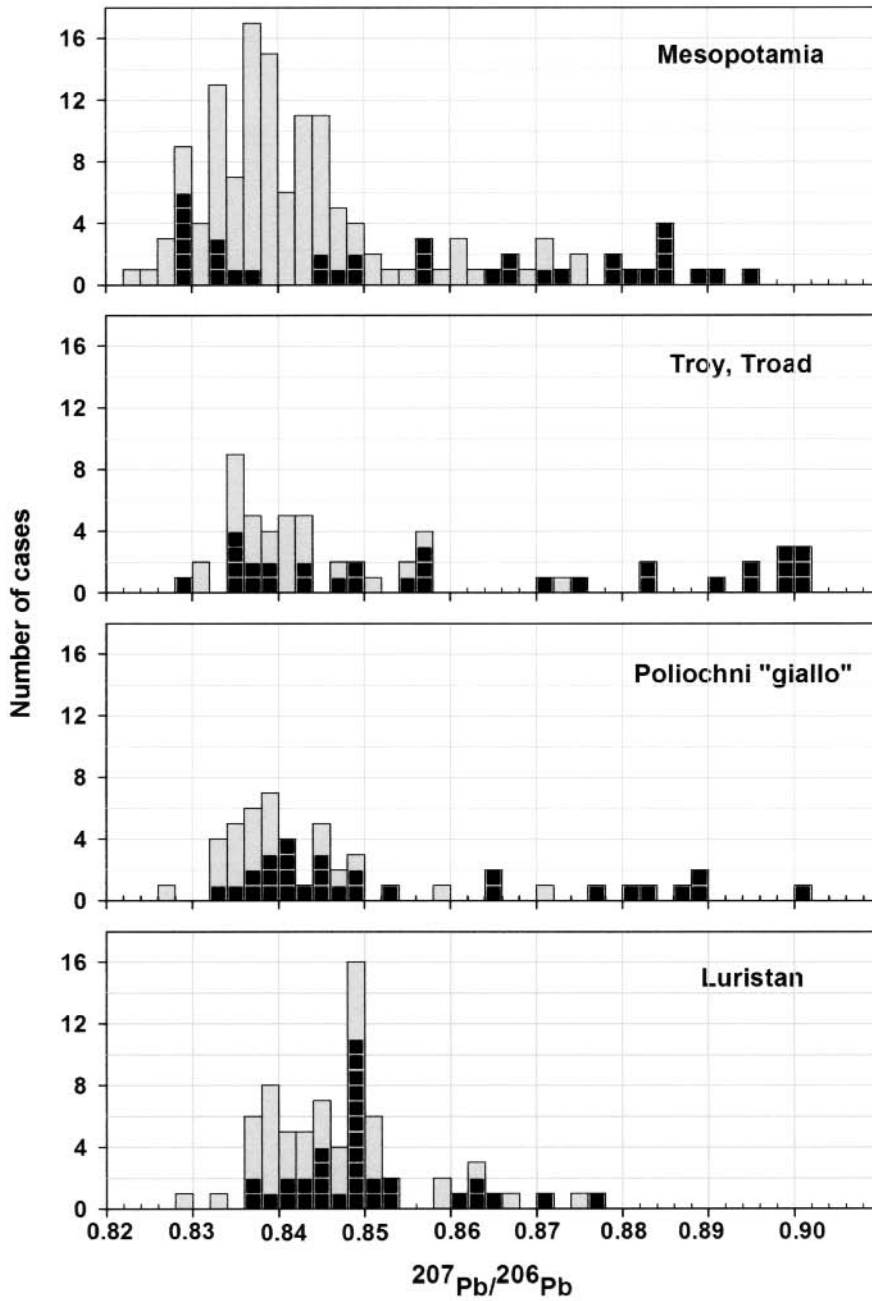


Fig. 12. In marked contrast to the situation in Luristan towards the end of the 3rd millennium BCE bronze objects (filled symbols) with high-abundance-ratio lead make up a major fraction of the total at Poliochni on Lemnos in the northern Aegean, in the Troad, and in Mesopotamia. (Adapted from Begemann et al. 1989).

of such trade at the entrance to the Gulf at Tell Abraq, United Arab Emirates (Weeks and Collerson 2004). In all probability it was then also traded from Mesopotamia into the northern Aegean and the Troad. Such a possibility is at least suggested by the observation that at Poliochni on Lemnos, during period “giallo” which dates to around 2300-2200 BCE (Pernicka et al. 1990), and among the bronze artefacts from Troia and the Troad (Pernicka et al. 1984; Stos-Gale et al. 1984) the high isotope abundance ratios are again an outstanding feature (fig. 12). In the absence of evidence to the contrary, and given the difficulties with identifying any ore sources with such high abundance ratios, we assign these artefacts to ores from the same source region as those which provided the copper in Mesopotamia.

We find it remarkable that in Luristan this isotopic signature should be completely absent. Admittedly, our knowledge of prehistoric Luristan is very limited. Even in Pusht-i Kuh, archaeologically the best documented area of Luristan, we know hardly anything about the ethnic or socio-economic context. The significance of the three cultural zones in the Pusht-i Kuh, although well visible in the material culture, remains to be explained. Since our data are only provided by a limited number of tombs, unevenly distributed over the region, it remains difficult, if not impossible, to visualise the socio-economic structure of third millennium Luristan society (Haerinck & Overlaet 2006: 68-70). The three Pusht-i Kuh zones may very well represent “tribal zones”, but whether the population had a full nomadic, semi-nomadic or sedentary lifestyle remains unknown. A semi- and full nomadic way of life with an economy based on some rain-fed agriculture and the herding of sheep and goats, co-existing with pockets of small settled communities is a combination which is well documented in the region in more recent times. It is well possible that the situation during the Early Bronze Age was not all that different.

Mounds are rare in Pusht-i Kuh, however, and none has ever been sounded or excavated. Some are known to exist in the Aivan, Ilam and Chavar areas (zone I), and in Shirvan-Chardaval (zone III) (Haerinck & Overlaet 1999: 1, ill. 1), but most of these are relatively small and can not represent any extensive settled society. At the same time, one has to keep in mind that little research has been focused on settlements. Our concept of the settlement patterns in Luristan may be much distorted as villages are often located on the lower slopes of mountains, close to springs providing fresh water. Such locations are likely to be covered by sediments, making

their detection difficult. Larger mounds are to be found on the fringes of Luristan in the direction of the Mesopotamian plain, from the Hamrin/Diyala region (where scarlet ware was abundant) to the Badrah area (some 20 km across the Iraqi border, see Hrouda 1973) along the major road between Babylonia and Elam.

Economic relations between the two regions are thus to be expected and the presence of Mesopotamian imports in Pusht-i Kuh zone I is, simply from a geographical point of view, almost self-evident. Zone I is characterised by Mesopotamian imports such as seals and painted pottery. Stylistically, the bronze finds from this region have for the most part direct Mesopotamian comparisons, to such an extent that it has been suggested repeatedly that most were likely imported into the Pusht-i Kuh (Haerinck & Overlaet 2006: 67). It is therefore all the more puzzling not to see more of these manifold interactions between Luristan and Mesopotamia reflected in the material features of the *metal* objects analysed. Assuming the interaction to have been purely one of inspiration, rather than an exchange of goods, might be an explanation although, given the proximity, it is presumably not a likely one. Of course, this puzzle is not contingent upon where ultimately the source of the copper-base metal may have been. Had it reached Mesopotamia via land the lack of any close connection would be equally baffling.

This apparent contradiction thus remains to be explained. It is evident that when items such as seals and even pottery of Mesopotamia reached zone I, also metal objects will have done so. Like with the painted “scarlet ware” potteries, where Mesopotamian imports as well as local imitations and Mesopotamian-inspired vessels occur, one expects metal objects of Mesopotamian origin as well as local copies to be found next to one another. Other metal artefacts, such as the ring-shaped pendants (BAMI-46 and 47; Lab. Nrs. 17 895 and 17 896, zone I, EBA IV, Pls. 9, 10), which have no Mesopotamian comparison whatsoever, are clearly local items. One of them was isotopically analysed and, incidentally, is not conspicuous in the isotopic composition of its lead or its trace element contents.

The fact that a good fraction of the ores used for the smelting of Luristan copper derive from sources other than those used for the Mesopotamian copper, is indicative of the importance of local production centres. The cost of the ores, or their more reliable supply, may be reasons why, in Luristan, one relied on different metal sources than in Mesopotamia. On the other hand, the total absence among the analysed Pusht-i Kuh artefacts of the

isotopically conspicuous high abundance-ratio bronzes which are prominent in Mesopotamia may, to some degree, be accidental. Although the majority of the tested artefacts do come from zone I where Mesopotamian imports are most likely, the number of analyses remains altogether limited which makes any conclusions subject to the limitations of poor statistics. Actually, in this respect the situation is not quite as bad as the present data might suggest. Nezafati et al. (2007) have analysed the lead isotopy of another 20 bronze objects from Luristan — possibly not all of indubitable provenience and many younger than Middle Bronze Age; they report the highest isotope abundance ratios to be $^{208}\text{Pb}/^{206}\text{Pb} \approx 2.10$; $^{207}\text{Pb}/^{206}\text{Pb} \approx 0.860$; $^{204}\text{Pb}/^{206}\text{Pb} \approx 0.0549$, i. e., among this suite of objects there is also not a single one with the high abundance ratios we are talking about.

In closing we repeat our conclusion that metal imports in Luristan, zone I were less important than previously thought and that, in zone III and in Pish-i Kuh, they may have been quasi non-existent. These results are essentially based on the lead isotope data while the trace element concentrations do not allow us to distinguish between Luristan bronzes and such from Mesopotamia. Had we only measured the chemical composition we might have concluded, as did Fleming et al. (2005), that during the 4th and 3rd millennia BCE Luristan should have been well-embedded in the trading and exchange system of goods within the Near East with nothing that sets it apart from, say, Mesopotamia or Elam. Their suggestion, however, that in Luristan we see Afghan tin and copper from Oman appears to us not to follow immediately, not even from the chemical data.

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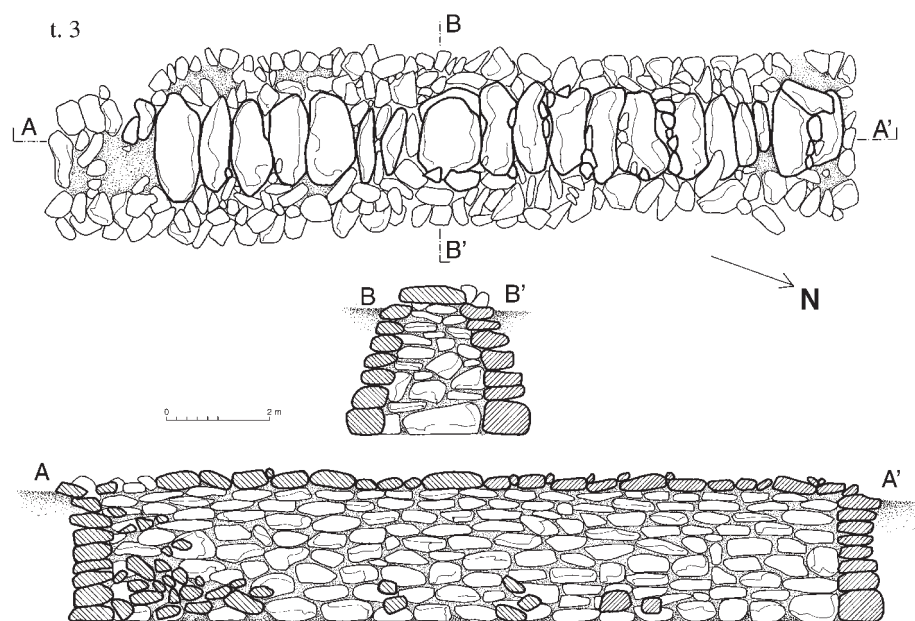
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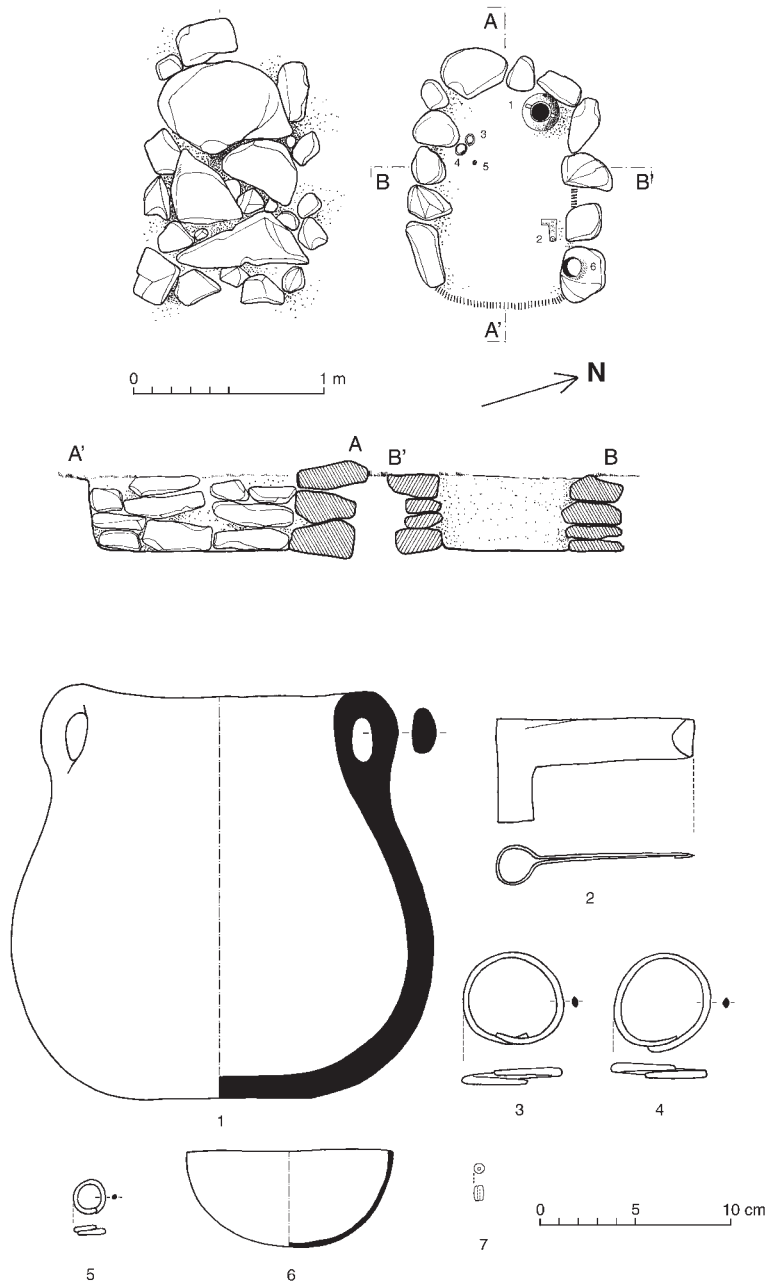
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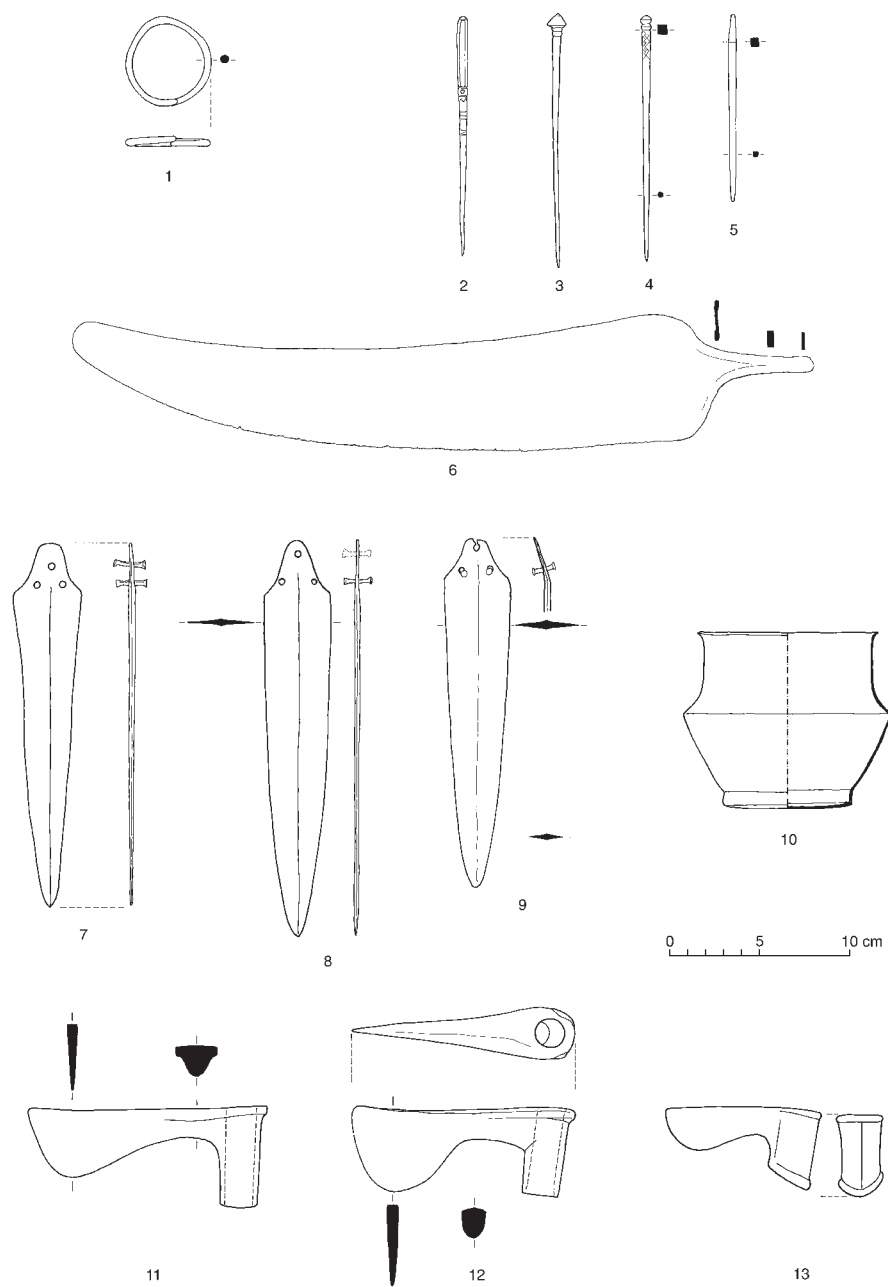


Pl. 1. Phase II corridor-shaped communal tombs in zone I of the Pusht-i Kuh, Luristan. Top: tombs at Bani Surmah. Bottom: Plan of tomb C3 at Kalleh Nisar (objects of tomb KN.C3 have been analysed, see BAMI-27 and 29). (Photographs and drawings by E. Smekens)

t. 2



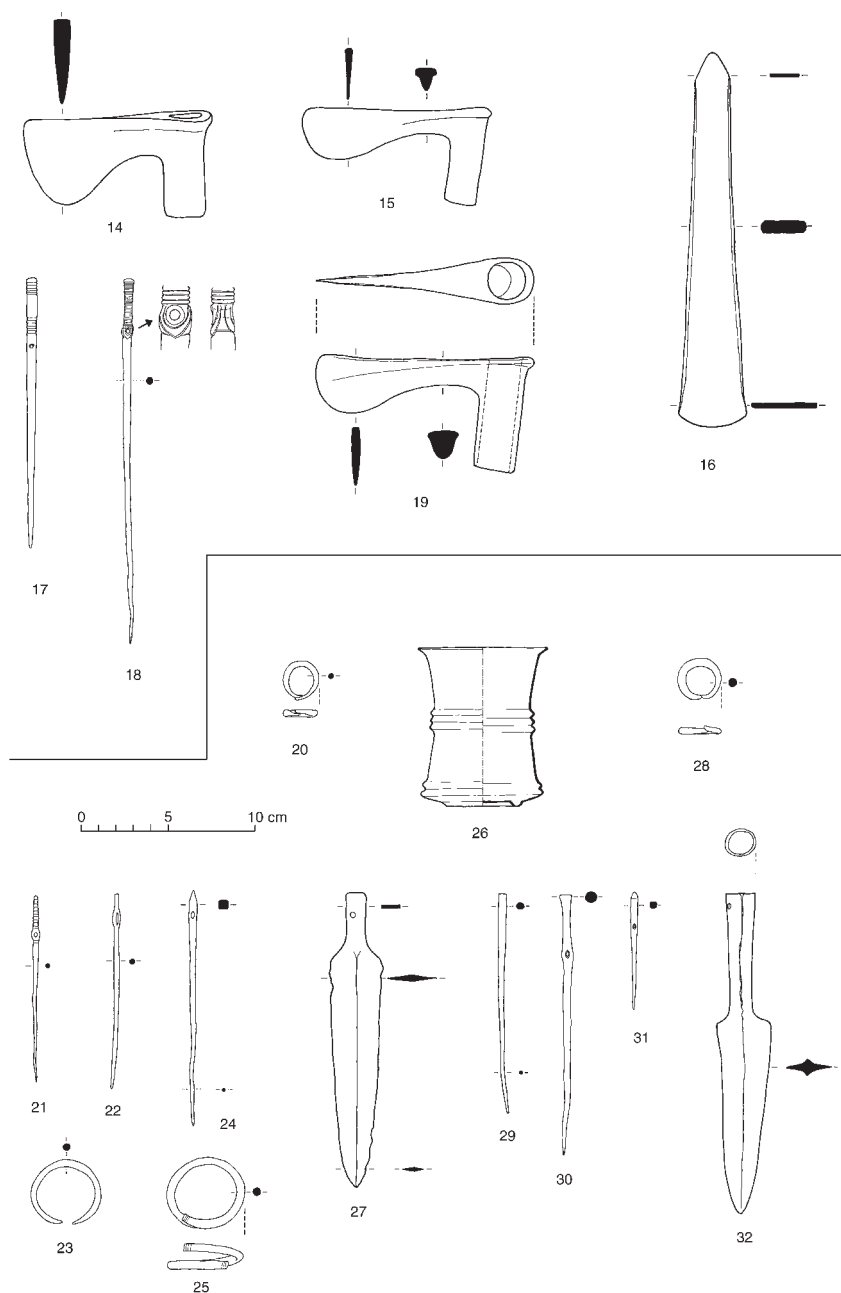
Pl. 2. The individual Phase IV tomb 2 at Kalleh Nisar AII (objects KN.AII.2-2 and 2-6 have been analysed, see BAMI-43 and 50). (Drawings by E. Smekens)



Pl. 3. Analysed metal objects from the Pusht-i Kuh excavations at Bani Surmah: BAMI-1 to 13. (Royal Museums of Art and History, Brussels-Collection Iran; drawings and plate by E. Smekens.)



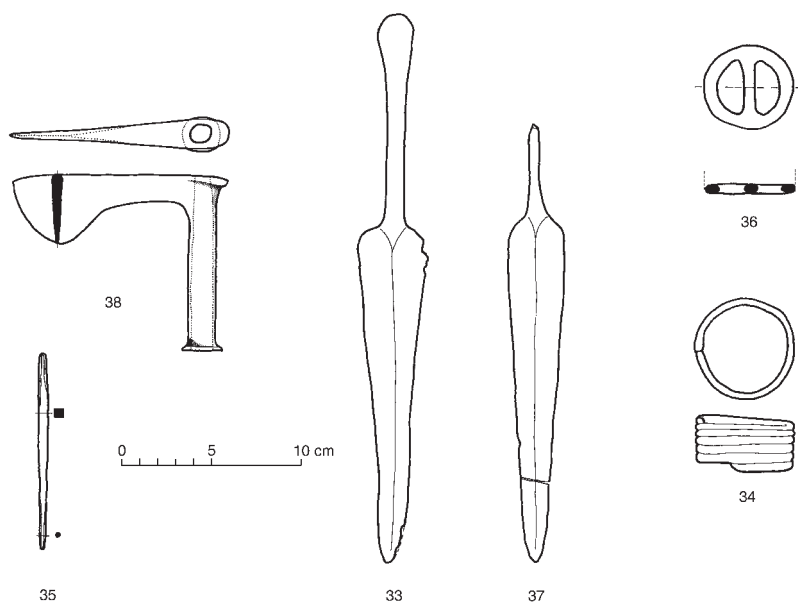
Pl. 4. Analysed metal objects from the Pusht-i Kuh excavations at Bani Surmah: BAMI-6, 8, 10, 11 and 13. (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



Pl. 5. Analysed metal objects from the Pusht-i Kuh excavations at Bani Surmah (BAMI-14 to 19) and Kalleh Nisar (BAMI-20 to 32). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens)



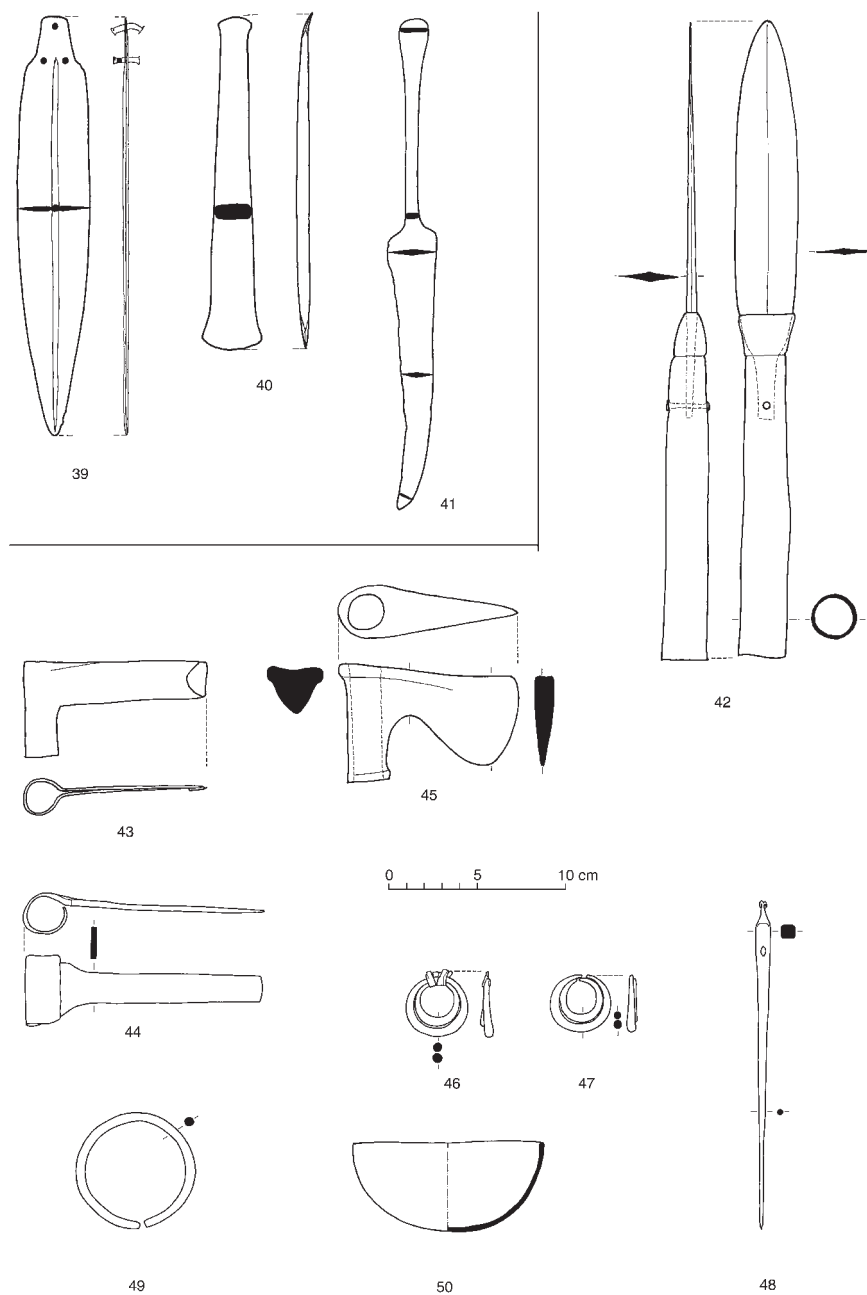
Pl. 6. Analysed metal objects from the Pusht-i Kuh excavations at Bani Surmah (BAMI-17 to 19) and Kalleh Nisar (BAMI-21, 22, 24, 26-27 and 32). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



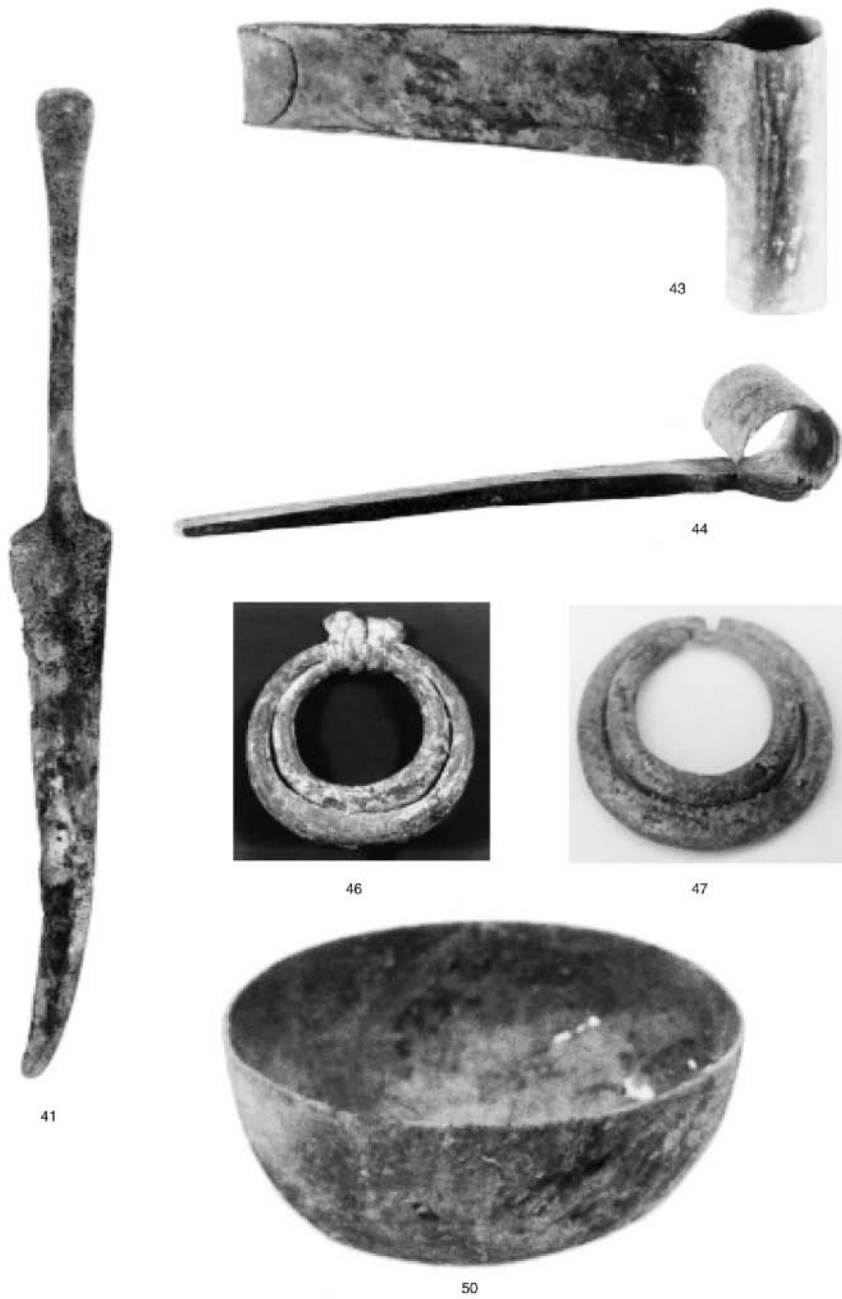
Pl. 7. Analysed metal objects from zone III tomb at Dar Tanha (BAMI-33 to 38) and view of the tomb with its gabled roof during the excavations. (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



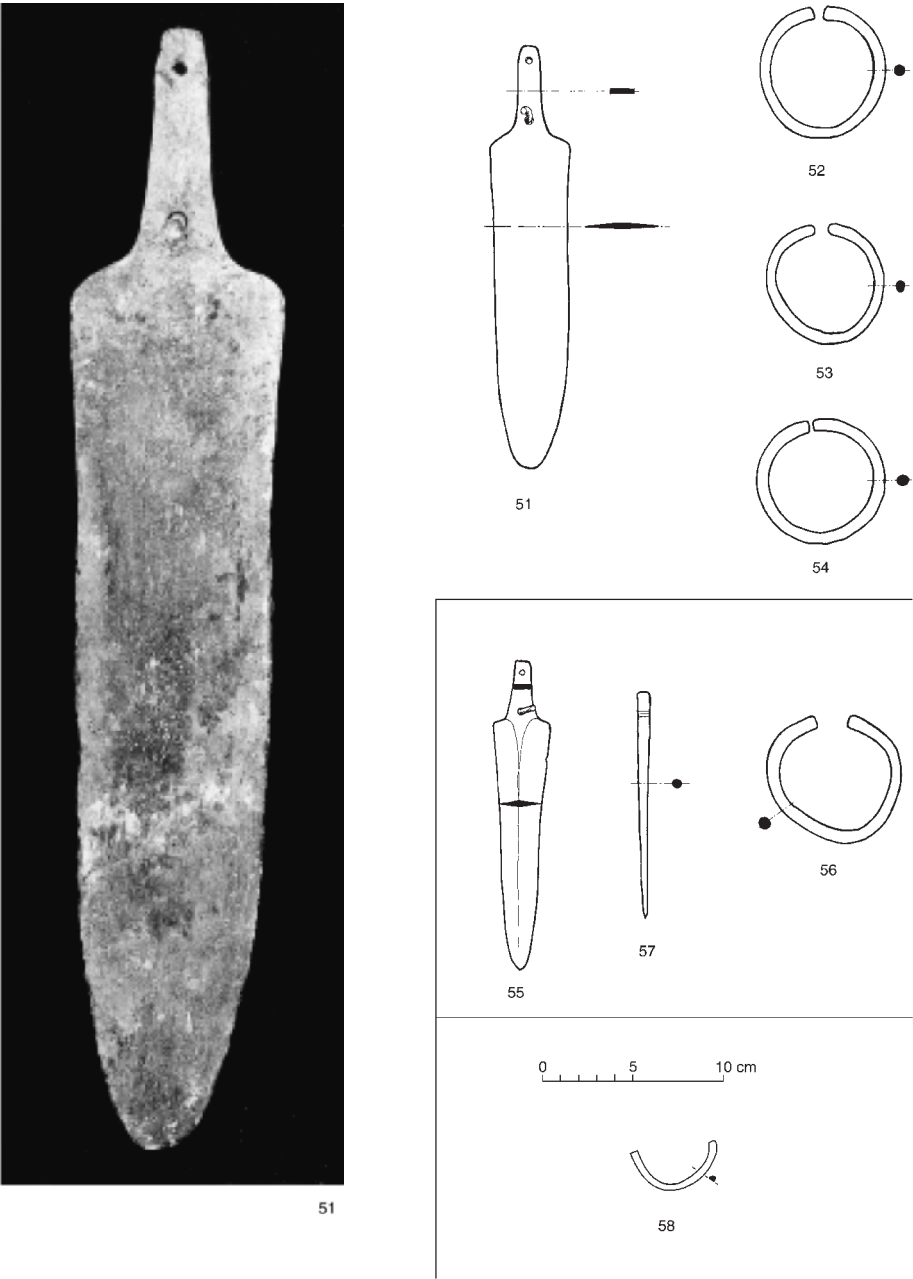
Pl. 8. Analysed metal objects from zone III tomb at Dar Tanha (BAMI-33 to 38). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



Pl. 9. Analysed metal objects from the Pusht-i Kuh excavations at Mehr War Kabud (BAMI-39 to 41) and Kalleh Nisar A II (BAMI-42 to 50). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



Pl. 10. Analysed metal objects from the Pusht-i Kuh excavations at Mehr War Kabud (BAMI-41) and Kalleh Nisar A II (BAMI-43, 44, 46-47 and 50). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



Pl. 11. Analysed Phase IV metal objects from the Pusht-i Kuh excavations at Sardant (BAMI-51 to 54), Gululal-i Galbi (BAMI-55 to 57) and Darvand A (BAMI-58). (Royal Museums of Art and History, Brussels-Collection Iran; plate by E. Smekens.)



Louvre-1



Louvre-2



Louvre-5



Louvre-3



Louvre-4

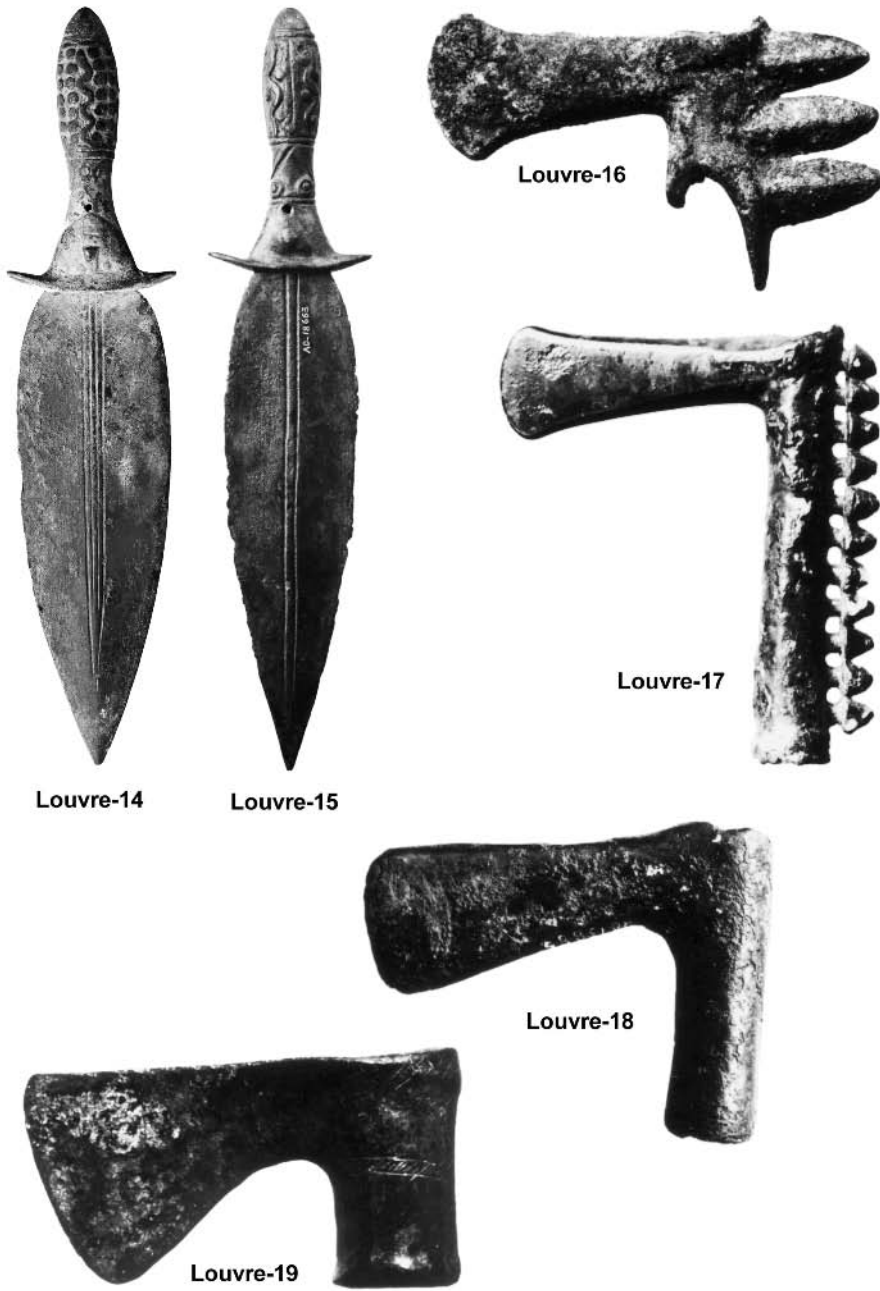


Louvre-6

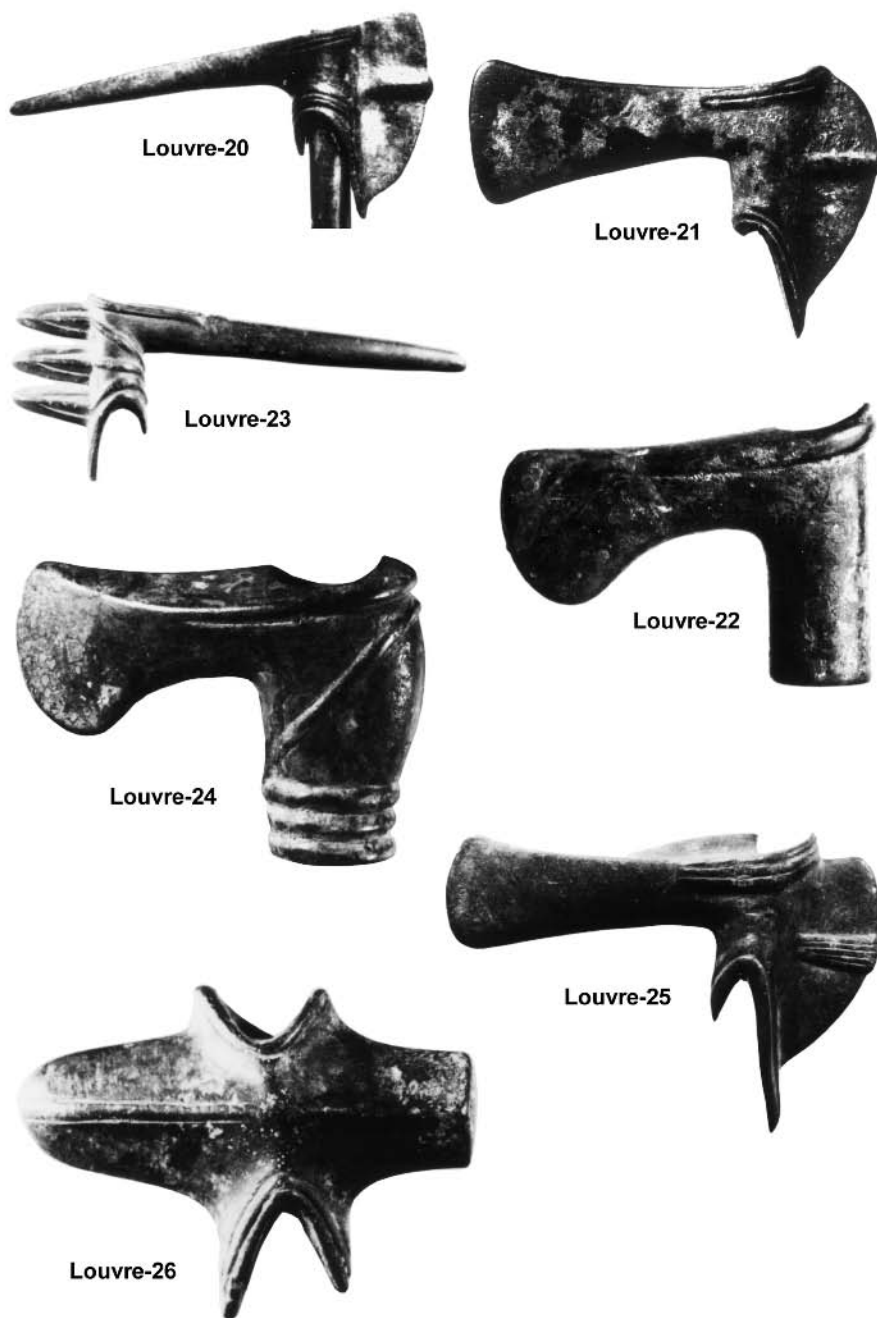
Pl. 12. Analysed metal objects from the Louvre collection (Louvre 1 to 6).
 (Photographs kindly supplied by the Réunion des Musées Nationaux © / nr. 3,
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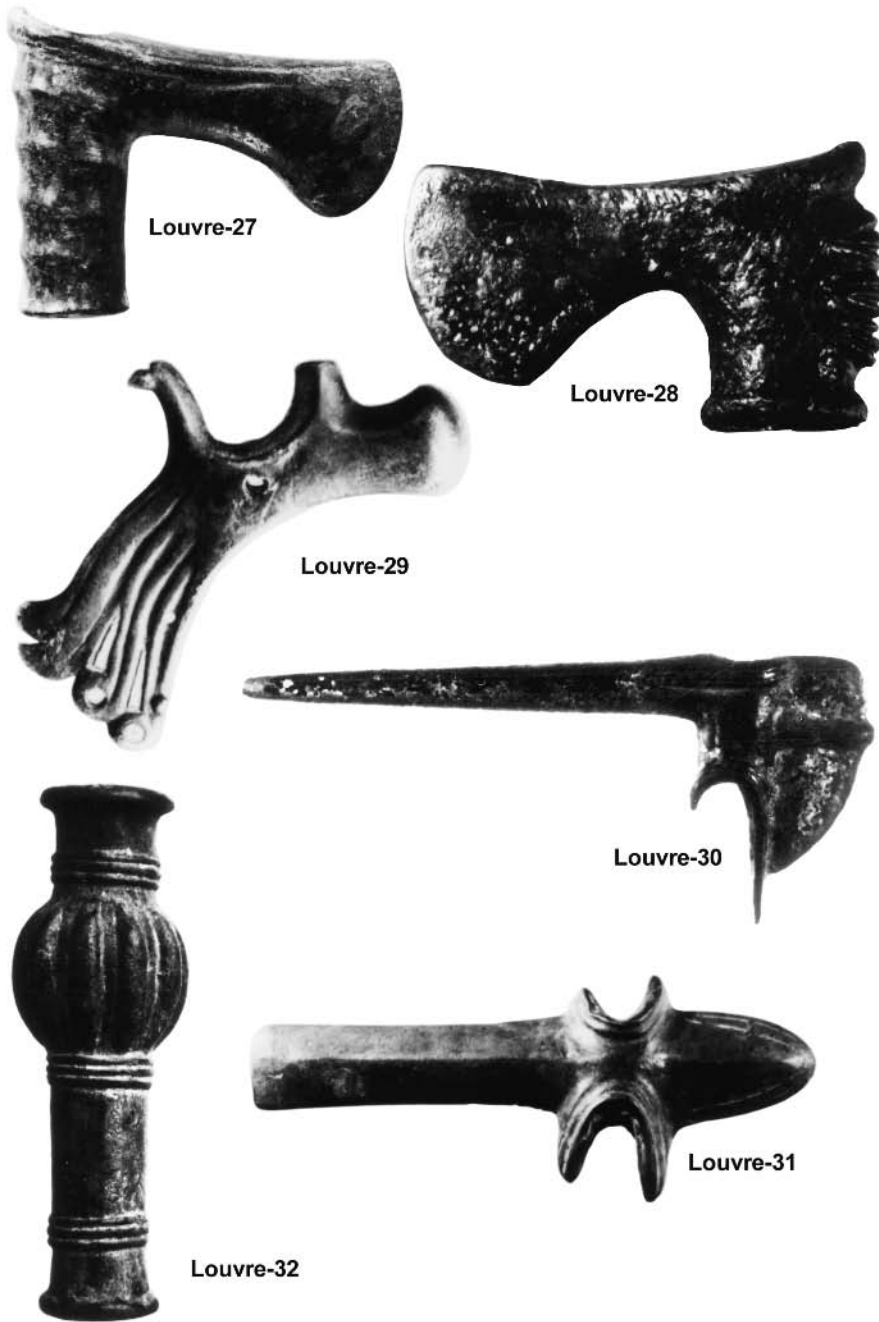
Pl. 13. Analysed metal objects from the Louvre collection (Louvre 7 to 13).
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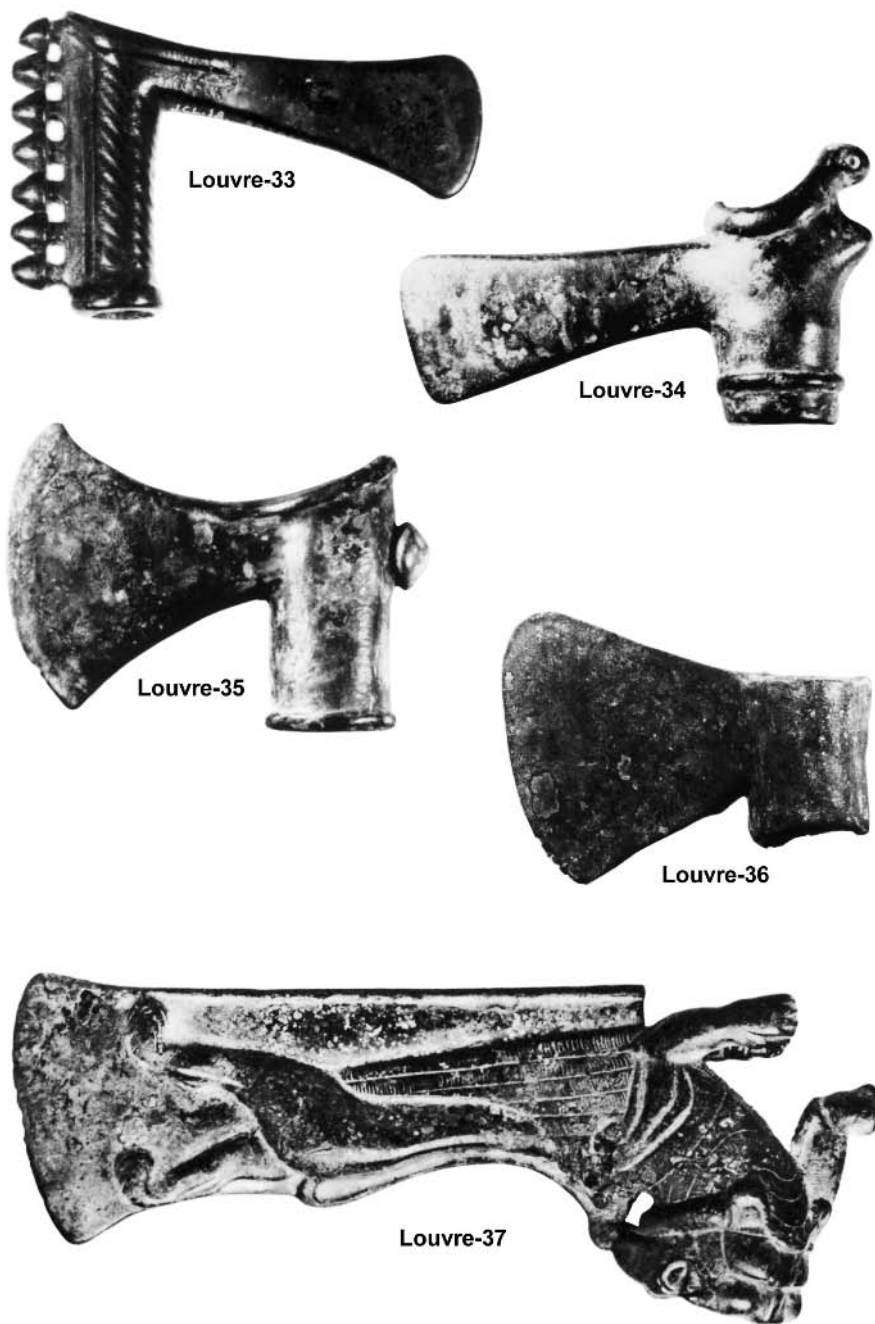
Pl. 14. Analysed metal objects from the Louvre collection (Louvre 14 to 19).
 (Photographs kindly supplied by the Réunion des Musées Nationaux © / nrs. 14-15,
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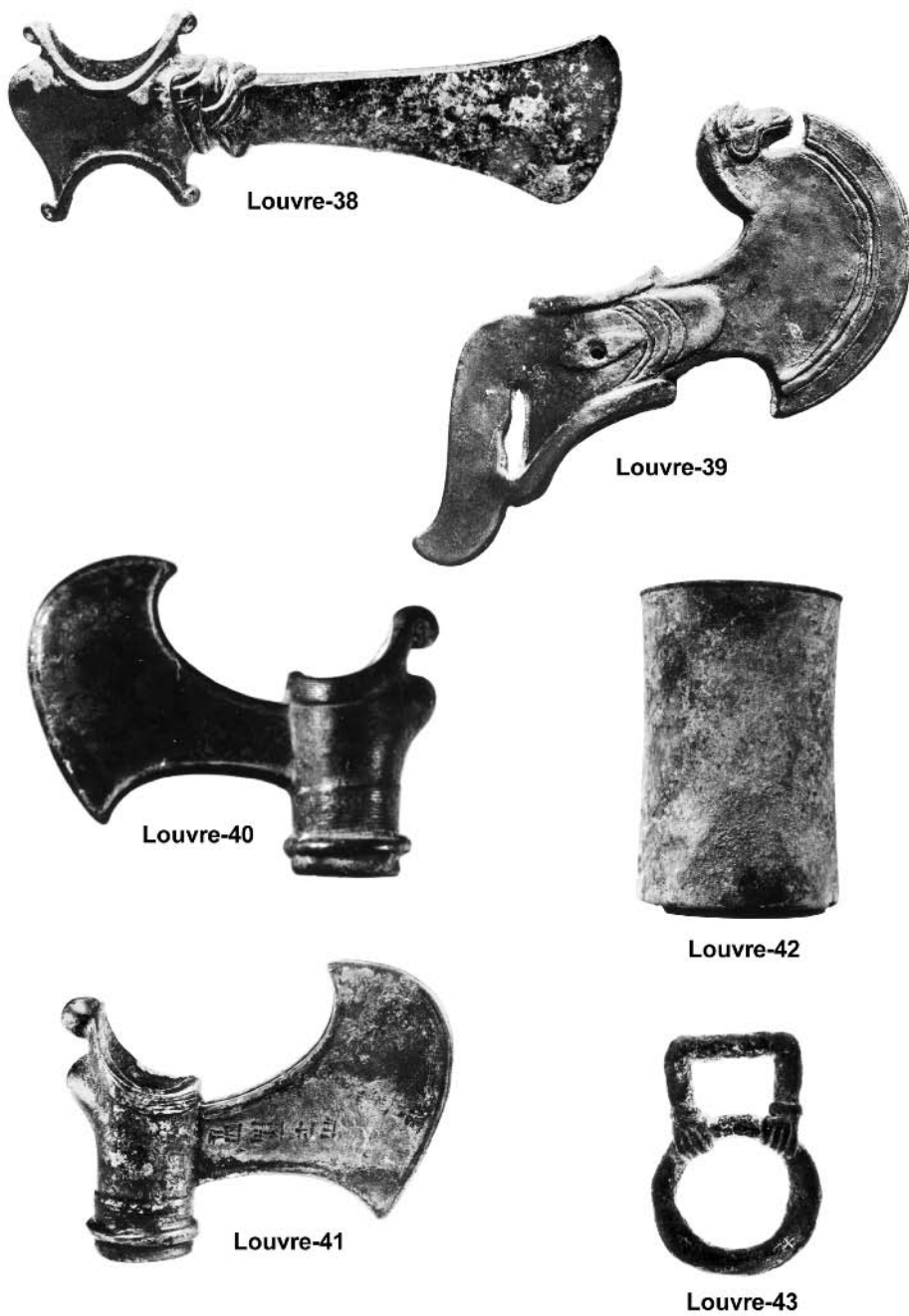
Pl. 15. Analysed metal objects from the Louvre collection (Louvre 20 to 26).
(Photographs kindly supplied by the Réunion des Musées Nationaux ©)



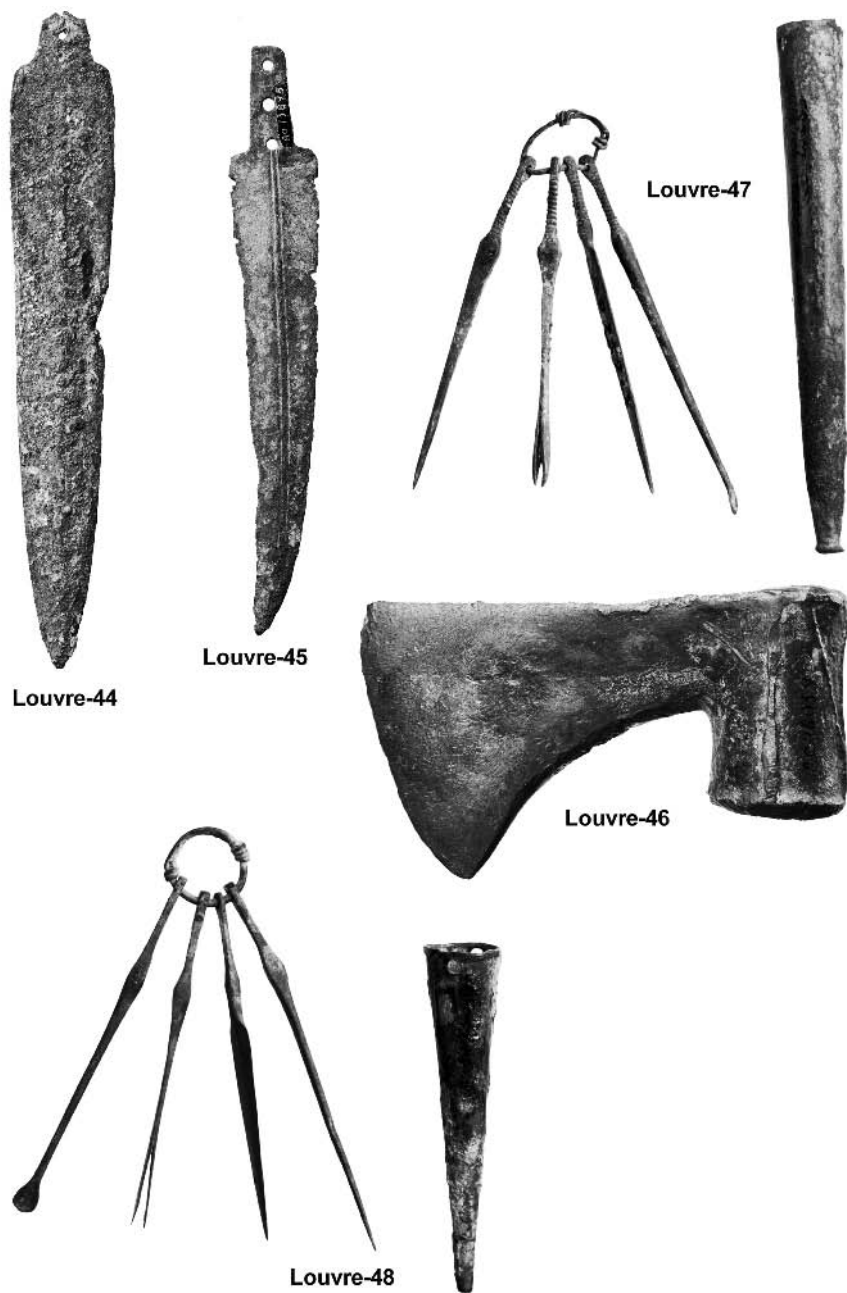
Pl. 16. Analysed metal objects from the Louvre collection (Louvre 27 to 32).
(Photographs kindly supplied by the Réunion des Musées Nationaux ©)



Pl. 17. Analysed metal objects from the Louvre collection (Louvre 33 to 37).
(Photographs kindly supplied by the Réunion des Musées Nationaux ©)



Pl. 18. Analysed metal objects from the Louvre collection (Louvre 38 to 43).
(Photographs kindly supplied by the Réunion des Musées Nationaux ©)



Pl. 19. Analysed metal objects from the Louvre collection (Louvre 44 to 48).
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ANNUS SIMAŠKENSIS¹ L'USAGE DES NOMS D'ANNÉE PENDANT LA PÉRIODE SIMAŠKÉENNE (CA. 1930-1880 AV. NOTRE ÈRE²) À SUSE

PAR

Katrien DE GRAEF
(Ghent University)

Abstract: Annus Simaškensis. The usage of year formulae during the Simaškean period (ca. 1930-1880 BCE) in Susa. Apart from the texts mentioning an Ur III year name, thirty-one texts originating from Susa bear a year formula “after Mesopotamian model” (MU ... (RN) ...). Thirteen of these mention the Simaškean ruler Ebarat I and can thus be dated within the Simaškean dynasty. One of them mentions the *Sukkalmaḫs* Pala-iššan and Kuk-Kirwaš and can thus be dated at the beginning of the *Sukkalmaḫat*. One of them originates from the excavation of chantier B by Ghirshman and can thus be dated archaeologically. The other texts, however, bear year formulae lacking the name of a ruler. None of these year formulae are known Ur III or Old-Babylonian year formulae. The question thus arises to which dynasty or period and/or rulers these year formulae can be attributed. This article presents our hypothesis that they should be attributed to the Simaški period (ca. 1930-1880 BCE). We further explore to what extent this hypothesis can contribute to our knowledge of the chronology and history of the Simaškean dynasty, the transition between the Ur III domination and the institutionalisation of the *Sukkalmaḫat* in Susa. The texts that are currently in the Louvre, are collated. A transliteration, translation and handcopy of the discussed passages (*in casu* the yearnames) is added.

Keywords: Susa — Simaški dynasty — early *Sukkalmaḫat* — yearnames — SW Iran.

¹ Ces recherches s'inscrivent dans le cadre du programme *Pôles d'attraction interuniversitaires n° VI/34. Etat Belge, Services fédéraux des affaires scientifiques, techniques et culturelles*.

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² Toutes les dates utilisées dans cet article suivent la nouvelle chronologie telle qu'elle a été établie dans Gasche, Armstrong, Cole et Gruzadyan 1998.

A. Introduction

Parmi les textes paléo-élamites II-III (ca. 2015-1450 av. notre ère) provenant de Suse (publiés dans *MDP* 10, 18, 22, 23, 24, 28, 54 et 55), il y en a cinquante qui portent un nom d'année de «type mésopotamien»³.

Dix-neuf de ces textes portent un nom d'année appartenant à la période Ur III⁴. Comme il s'agit ici de la période pendant laquelle les rois néo-sumériens de l'empire Ur III dominaient la ville de Suse — période que nous avons appelé la période paléo-élamite IIA ou la période Ur III «susienne» (en opposition avec la période Ur III en Mésopotamie), de ca. 2015 à ca. 1930 av. notre ère (cf. *MDP* 54: 115) — l'usage de noms d'années de ces rois ne doit pas du tout nous étonner.

Treize de ces textes portent un nom d'année mentionnant Ebarat I, le 3^{ème} roi simaškéen (à dater approximativement vers 1960 av. notre ère)⁵. Puisqu'il s'agit de la période suivant immédiatement la période Ur III «susienne» — période que nous avons appelé paléo-élamite IIB, de ca. 1930 à ca. 1880 av. notre ère (cf. *MDP* 54:115) — nous pouvons conclure que l'usage de noms d'année selon le modèle mésopotamien par Ebarat I est sans doute dû à la grande influence mésopotamienne que la région de Suse a subi précédemment. Comme nous le verrons ci-après, les *Sukkalmah* quant à eux, n'ont pas employé de noms d'année — même s'ils ont repris la coutume du serment prêté au nom du souverain et du (des) dieu(x) que nous employons comme élément de datation à défaut justement de noms d'année⁶. La seule exception est *MDP* 24, 348 où, sur la tranche latérale

³ Nous désignons ainsi les noms d'année commençant avec «MU» (l'année ...) ou «MU US.SÁ» (l'année après l'année ...), formulant un événement (ou plus) caractérisant l'année (souvent mentionnant le nom du roi) et leurs abréviations, cf. Horsnell 1999: 123-147.

⁴ *MDP* 10, 121 (I-S 2), 125 (A-S 5) et 126 (A-S 4), *MDP* 18, 79 (I-S 3), *MDP* 28, 410 (Š-S 4), 454 (A-S 5) et 467 (Š-S 2), *MDP* 54, 1 (Š-S 4), 2 (Š-S 5), 3 (Š-S 5), 4 (Š-S 7), 5 (Š-S 7), 6 (Š-S 8), 7 (Š-S 8), 8 (Š-S 8), 9 (I-S 1), 10 (I-S 1), 11 (I-S 1) et 12 (I-S 1). Cf. aussi *MDP* 54: 91-99.

⁵ *MDP* 18, 199, *MDP* 23, 291, 292, 295, 296, 297, 298, 299, 300, 301, 302, 304 et 305. Cf. De Graef 2004 et *MDP* 54: 99 et 105-113.

⁶ Quelques variantes de ce serment sont (*passim* dans les textes publiés dans *MDP*): (1) le serment au nom du roi: mu lugal.bi in.pàd.da «au nom du roi ils prêtèrent serment»; mu NR₁ ù NR₂ itmû (ša ibbalakkatu x [de l'orge/l'argent] ì.ág.e / ì.lá.e / imaddad / išaq-qal) «au nom de NR₁ et de NR₂ ils jurèrent que celui qui romprait le contrat payerait (pèserait), x [d'orge/d'argent] et mu NR₁ ù NR₂ ša ibbalakkatu rittāšu ù lišāššu inakkisu x [de l'orge/l'argent] ì.ág.e / ì.lá.e / imaddad / išaq-qal ù kidin ^dmùš.eren ilput imât «au nom de

gauche, nous trouvons un nom d'année mentionnant les *Sukkalmah* Pala-iššan et Kuk-Kirwaš:

14': [mu] 'pá'-la-iš-ša-an gi.na ù me-ša- / -ra-am
15': [ù ku]-'uk'-kir-wa-aš uš-zi-zu-ma

«L'année où Pala-iššan et Kuk-Kirwaš ont installé le droit et la justice⁷». Il s'agit ici du troisième (Pala-iššan) et quatrième *Sukkalmah* (Kuk-Kirwaš) appartenant tous deux au «groupe Pala-iššan», qui se situe tout au début de la nouvelle dynastie des *Sukkalmah*, non loin après Ebarat II / Šilḥaḥa / Atta-ḥušu (cf. *MDP* 54: 103-105 et *MDP* 55: Ch. 3 et 4). Peut-être les premiers *Sukkalmah* employaient-ils donc encore des noms d'année sur modèle mésopotamien, comme continuation de ce même usage par (certains) souverains Simaškéens. Il nous semble cependant clair que l'usage des noms d'année de type mésopotamien n'était pas généralisé pendant la dynastie des *Sukkalmah*: ce serait bien un hasard extraordinaire que seul un de ces noms d'année nous soient parvenus, vu le nombre quand même assez important des textes datant de cette période.

Il est remarquable qu'en dehors des textes Ur III et Ebarat il y a encore d'autres textes de Suse avec un nom d'année suivant le modèle mésopotamien mais dont nous ne savons pas à quelle dynastie ni même à quel roi ils appartiennent. Il s'agit de dix-sept textes (*MDP* 10, 2 et 98, *MDP* 18, 84, 85, 120, 121, 122, 123, 124, 125 et 127, *MDP* 22, 22, *MDP* 24, 385, *MDP* 28, 473, 505 et 514 et *MDP* 55, 50⁸), que nous analyserons ci-dessous. Une

NR₁ et de NR₂ ils jurèrent que celui qui rompt le contrat, on lui coupera les deux mains et la langue, x [d'orge/d'argent] il payera (pèsera) et celui qui toucha au *kidinnu* d'Inšušinak, il mourra» (sous le texte, après les témoins); *ina* mu NR₁ ù NR₂ «sur la vie de NR₁ et de NR₂» (dans le texte) et (2) serment au nom des dieux: mu ND₁ ù ND₂ «au nom de ND₁ et de ND₂» (le plus souvent Inšušinak et Išme-karab, à la fin du texte, après les témoins), cf. *CAD* N₂ *sub* nīšu A (*nēšu*) oath (lit. life), *CAD* R *sub* rittu A (*rettu*) 1. a) human hand 3' cut off as punishment, et *CAD* K *sub* kidinnu a) divinely enforced security (symbolized by a sacred insigne), 1' in Susa, a' with *lapātu*.

⁷ Cf. *CAD* M₂ *sub* mīšaru A 1 (redress [as a legislative act to remedy certain economic malfunctions]): [mu] RN u RN₂ gi.na u me-ša-ra-am ušzizuma: year in which RN and RN₂ erected (a stela promulgating) justice and redress.

⁸ A part un nom d'année, huit de ces textes mentionnent aussi un «formule BAL» (le plus souvent entre le nom du mois et le nom d'année ou juste avant le nom d'année): BAL gu.la (*MDP* 18, 85; 28, 505 et 514), BAL igi.uru (*MDP* 18, 121, 122, 123 et 127) et BAL uru.dag (*MDP* 18, 124). Comme nous l'avons déjà mentionné dans notre article sur les textes de V récent du chantier B (De Graef 2007), il est possible que dans certains textes

translittération, une traduction et une copie (des tablettes du Louvre seulement) des passages cruciaux (*in casu* les noms d'année) sont ajoutées.

B. Les noms d'année susiens encore inattribués

Comme le système des noms d'année est continué sous la dynastie des Simaškéens mais pas sous les *Sukkalmah* (à part l'exception citée) il nous semble logique de partir du point de vue qu'une partie au moins de ces noms d'année doivent être attribués à des souverains de la dynastie des Simaškéens (Ebarat I et/ou ses successeurs).

1. *MDP* 10, 2

Sur la tranche latérale gauche nous lisons: mu šà šu-mu-a-bi. Cette phrase a été interprétée d'abord par Scheil (*MDP* 10: 20), et ensuite par Vallat (1996: 310-311) et plus récemment par Steve, Vallat et Gasche (2002: 383-384 et 446-447) comme une variante du premier nom d'année de Sumu-abum de Babylone (1798-1785 av. notre ère). Avec Grillot et Glassner (1993), nous sommes cependant convaincu qu'il ne s'agit pas d'un nom d'année de Sumu-abum. Le Šumu-abi de *MDP* 10, 2 est sans doute le même que le Šumu-abum de *MDP* 10, 21, où il est responsable (gîr). *Primo*, il est peu probable que le roi de Babylone était en même temps responsable administratif à Suse. *Secundo*, les signes MU et GÎR sont employés l'un pour l'autre dans les textes de *MDP* 10⁹. En plus, la raison la plus importante est qu'il n'y a aucune source historique (ou autre) permettant de supposer que Suse aurait été sous influence babylonienne au début du règne de Sumu-abum, bien au contraire. Ce sujet est traité plus en détail dans *MDP* 54: 102-103. Vu le contenu et la forme extérieure de la tablette¹⁰, il n'est même pas certain que ce soit un nom d'année. En tout cas, un souverain du nom de Šumu-abi n'est pas connu à Suse. Il nous semble plutôt qu'il s'agit en fait d'une phrase administrative du même type que MU/GÎR lúkin.gi₄.a dans

cette formule ait un sens chronologique. Jusqu'à présent, nous ignorons le sens exact de la «formule BAL». La présence d'une formule BAL et d'un nom d'année en même temps dans ces textes ne sera pas traitée dans cet article. La possibilité d'un double système de datation sera examinée dans une étude future.

⁹ MU lúkin.gi₄.a (dans *MDP* 10, 16: 3, 24: 2 et 35: 2) vs. GÎR lúkin.gi₄.a (dans *MDP* 10, 19: 3, 33: 2 et 36: 4).

¹⁰ Nous reviendrons ailleurs sur le contenu et la forme extérieure de cette tablette.

les autres textes de *MDP* 10 (cf. note 9), que nous pouvons traduire par «au nom de / sous la responsabilité de Šumu-abi».

2. *MDP* 10, 98

Au revers nous lisons: mu edin *zu-ru-^{ki}maš* ba-al «L'année où la plaine de la ville de Zurumaš fut «creusée»». Pour Zurumaš^{ki}, cf. *RGTC* 11 *sub* *Zurumaš et *EW* II *sub* *zu-ru-maš*.KI «aE Ortsname». Ce toponyme n'est pas attesté ailleurs.

3. *MDP* 18, 84

Au revers nous lisons: mu bur-ra-ⁿⁱ-[...] «L'année où son offrande (?)¹¹ ...». Malheureusement il reste trop peu de ce nom d'année pour le comprendre, mais assez pour savoir que ce n'est pas un nom d'année déjà connu.

4. *MDP* 18, 85 = *MDP* 23, 303

Au revers nous lisons: mu ^{zi}-*in-ki-ri*^{ki} ba-*hul* «L'année où la ville de Zinkiri fut détruite». Pour Zinkiri^{ki}, cf. *RGTC* 11 *sub* *Zinkiri et *EW* II *sub* [z]i-in-ki-ré.KI (?) «aE Ortsname». Scheil (*MDP* 23: 164) suggère que ce pourrait être l'ancien nom de la moderne Senkere, et renvoie au toponyme ^{aš}*še-en-ku-ru* dans une inscription de Šilḫak-Inšušinak I (König 1965: n°54: ii 44). Selon Cameron (1936: 115) ce Šenkuru est situé en Mésopotamie sans plus (cf. *RGTC* 11 *sub* Šenkuru). La Senkere (ou Sinkara) moderne en Mésopotamie est cependant l'ancienne Larsa, dont le nom est toujours écrit logographiquement «ud-unu^{ki}» dans les documents mésopotamiens (cf. *RGTC* 2 *sub* Larsa(m)). La ville de Larsa n'est mentionnée qu'une seule fois à Suse, selon *RGTC* 11 (*sub* *Larsa) à savoir, dans le nom de la 16^{ème} année de Gungunum de Larsa (1837-1811 av. notre ère) dans *MDP* 10, 124: 8-9: ^{mu} é ^dinanna ud.unu^{ki} ^{ba}.dù¹ «L'année où le temple d'Inanna fut construit à Larsa»¹². L'usage de ce nom d'année de Larsa implique que Gungunum de Larsa ait eu à un certain moment le contrôle de Suse. Après la chute de l'empire Ur III, en Mésopotamie les villes d'Isin et de Larsa devinrent puissantes. Ces deux cités états étaient

¹¹ Cf. ePSD *sub* bur [BOWL] wr. bur (ED IIIa-IIIb, LagašII, UrIII, OB) ^{na}bur “(food)offering, sacrifice; meal(-time); (stone)owl; a priest”.

¹² Version complète selon Sigrist et Damerov: mu é ^dinanna šà ud.unu^{ki}.ma ba.dù «Year the temple of Inanna was built in Larsa».

constamment en guerre l'une avec l'autre ainsi qu'avec d'autres cités ou territoires, dont l'Elam, comme il apparaît dans les noms d'année de leurs rois¹³. Kindattu, le 6^{ème} roi de la dynastie simaškéenne, fils de Tan-Ruḫurater, a régné en même temps qu'Išbi-Erra d'Isin (Van Dijk 1978), dont nous savons qu'il mit fin, dans sa 27^{ème} année de règne, à l'occupation de l'Elam par Ur (cf. les noms d'année d'Išbi-Erra 27 et 28)¹⁴. Ce même Išbi-Erra régnait déjà à Isin pendant que Ibbi-Sîn était encore au pouvoir à Ur (cf. en dernier lieu Gasche, Armstrong, Cole et Gurzadyan 1998: 81-83) — l'empire d'Ur III est en chute libre à ce moment¹⁵. Si *zi-in-ki-ri*^{ki} est en effet une dénomination ancienne pour la Senkere moderne comme le propose Scheil, cela pourrait-il avoir un rapport avec la présence de Simaškéens dans les environs de Larsa, qui aurait alors déjà été connue sous son nom sémitique¹⁶? Notons que Larsa a eu plus tard aussi

¹³ Išbi-Erra d'Isin (1921-1889 av. notre ère) noms d'année 10+x (selon Van Dijk 1978 mais 16 selon Sigrist et Damerow) (mu ugnim *ki-maš ù elam.e bī.in.ra* «Year the armies of Kimaš and Elam were beaten»), 27 (mu elam šà úri^{ki}.ma durun.a ^{giš}tukul kalag.ga.ni im.ta.e₁₁ «Year (Išbi-Erra) brought out of Ur, with his strong weapon, the Elamite who was dwelling in its midst») et 28 (mu ús.sa elam šà úri^{ki}.ma durun.a ^{giš}tukul kalag.ga.ni im.ta.e₁₁ «Year after the year (Išbi-Erra) brought out of Ur, with his strong weapon, the Elamite who was dwelling in its midst»); Šū-ilīšu d'Isin (1888-1879 av. notre ère) nom d'année 2b (mu ^dšu-ì-lī-šu lugal.e ... *an-ša-an*^{ki}.šè ... ^dnanna.ra mu.na.dù (?) «Year Šū-ilīšu the king ... to Anšan ... for Nanna erected (?)»); Iddin-Dagan d'Isin (1878-1858 av. notre ère) années 2 (mu ^di-din-^dda-gan ma-tum-ni-a-tum dumu.munus lú *an-ša-an*^{ki} ba.an.tuk «Year Matumniatum daughter of Iddin-Dagan was taken in marriage by the king of Anšan») et 3* (mu ús.sa ^di-din-^dda-gan ma-tum-ni-a-tum dumu.munus.a.ni lugal *an-ša-an*^{ki} ba.an.tuk.a «Year after the year Matumniatum daughter of Iddin-Dagan was taken in marriage by the king of Anšan»); Gungunum de Larsa (1837-1811 av. notre ère) années 3 (mu *ba-ši-mi*^{ki} ba.ḫul «Year Bašimi was destroyed»), 4 (mu ús.sa *ba-ši-mi*^{ki} ba.ḫul «Year after the year Bašimi was destroyed») et 5 (mu *an-ša-an*^{ki} ba.ḫul «Year Anšan was destroyed») et Sîn-iqīšam de Larsa (1745-1741 av. notre ère) années 5a (mu *ka-za-lu*^{ki} erín ugnim kur ... elam^{ki}.ma *za-am-bi-ia* lugal *ì-si-in*^{ki} tin.tir^{ki} ^{giš}tukul ba.an.sìg «Year Kazallu, the army of the land of Elam, Zambiya the king of Isin and Babylon were smitten with weapons») et 5b (mu kur elam^{ki}.ma.šè ba.an.sìg «Year the land towards Elam was defeated») (d'après Sigrist et Damerov).

¹⁴ Notons aussi que le texte BIN 9, 382 (Išbi-Erra 19) qui fait mention de messagers de *ki-in-da-du* et *i-da-[du (?)]*.

¹⁵ Cf. en dernier lieu Potts (1999:139-149) pour un résumé de l'histoire de cette période, avec références.

¹⁶ Le nom de la ville de Larsa s'écrit logographiquement «ud.unug», ce qui n'a pas de signification connue en sumérien. Le toponyme Larsa pourrait, comme un certain nombre d'autres, être un reliquat d'une langue substrat, d'une culture et d'un peuple précédant les sumériens, ce que Gelb (1960: 261 sq.) appelle «the x population of unknown relationship, different from either the Sumerians or Akkadians», un des quatre éléments qui composent l'entité ethno-linguistique de la Babylonie dans la période d'Obeid, la plus ancienne

une relation spéciale avec les Elamites, sous la dynastie amorrite dite «élamisée» des rois Warad-Sîn en Rîm-Sîn, fils de Kudur-Mabuk¹⁷. Une autre possibilité serait que le toponyme *zi-in-ki-rî* de *MDP* 18, 85 (= *MDP* 23, 303): 5 serait une graphie variante du toponyme Zikirum (*zi-ki-ri-im*) du texte des archives d'Igibuni *MDP* 54, 22: 8, cf. *RGTC* 3 *sub* Zikirî (une seule attestation citée: *VS* 13, 104 III 13 (Stol), IV 9: *PN* ^{uru}*zi-ki-ri-i*). Que *zi-in-ki-rî*, *zi-ki-ri-im* et *zi-ki-ri-i* soient des variantes d'un seul toponyme, nous semble évident, la question reste alors de savoir si celui-ci doit être mis en rapport avec la Senkere moderne, ou s'il s'agit d'une autre localité, appelée Zikirum. Nous connaissons les noms de trois personnes dans *MDP* 54, 22 et *VS* 13, 104 III 13 et IV 9, dont il est dit qu'elles sont originaires de Zikirum: Gambizum dans le premier texte et Zikir-ilišu et Šamaš-liwir dans le second. Les noms de *VS* 13 sont clairement des noms accadiens qui sont attestés plusieurs fois dans les textes paléo-babyloniens. L'origine du nom Gambizum (écrit: *ga-am-bî-'zum'*) est moins facile à établir; ce pourrait être un précurseur du nom vieux perse Kambezza (cf. *MDP* 54: 70). Tout cela ne nous apprend pas grand-chose sur la localisation de Zikirum. Nous pouvons seulement constater qu'au cours de la période Ur III un habitant de cette localité portait un nom étranger (ni sumérien ni accadien) mais que pendant la période paléo-babylonienne, deux autres personnes de la même localité portaient des noms accadiens. Cela pourrait peut-être indiquer que Zikirum avait été «accadisée» dans la période paléo-babylonienne, mais pas avant, ce qui exclut une identification de Zikirum avec Larsa. Notons en plus que dans les textes du début du *Sukkalmahat* il est question d'un *atappum* appelé Zikirum (cf. *MDP* 55). Comme il s'agit de localisation de champs distribués à des soldats et d'autres personnes au service de l'état, il semble probable que le toponyme (et l'hydronyme) Zikirum soit à situer dans les environs de Suse.

connue à ce jour, avec (2) les sumériens, (3) les accadiens et (4) un mélange de ces quatre éléments. Il n'est donc peut être pas impossible que déjà au début de la période paléo-babylonienne la ville ou la région de Larsa ait été connue sous la dénomination sémitique de *zi-in-ki-ri*.

¹⁷ Voir à ce sujet aussi la première lettre-prière de Sîn-iddinam de Larsa (1754-1748 av. notre ère) à Utu (*editio princeps* dans Van Dijk 1965) où il est question d'un ennemi qui était *sukkal* indiquant sans doute qu'il s'agissait d'un élamite (cf. aussi De Graef 2003).

5. *MDP* 18, 120

Sur la première ligne de la tranche latérale nous lisons: mu ús.sa é.kišib.ba gibil ba.dù «L'année après l'année où le nouveau «é.kišib.ba» fut construit». Ce nom d'année — ou du moins la variante courte dont nous disposons — se retrouve encore dans *MDP* 18, 121 et 122 (cf. *infra*). Les seuls noms d'année connus qui mentionnent un «é.kišib.ba» sont les années e) et f) de Lipit-Ištar d'Isin (ca. 1832-1828 av. notre ère). Ces noms d'année n'ont, pour le reste, aucun point commun avec le nôtre. En outre, il n'y a, à ce jour, aucune indication que l'on aurait utilisé des noms d'année de Lipit-Ištar à Suse. Une remarque importante concernant ce texte est qu'un certain Igibuni y est mentionné. S'il s'agit de notre propriétaire d'archives — dont nous savons avec certitude qu'il était actif entre Šū-Sîn 4 et Ibbi-Sîn 1 (cf. *MDP* 54) — ce nom d'année doit nécessairement être situé après la période Ur III susienne, et devrait donc appartenir à un souverain Simaški, notamment *post* Ibbi-Sîn 3. Malheureusement le nom d'année lui-même ne contient aucune indication qui permet de le rattacher à cette dynastie. Cela est d'autant plus dommage que cela aurait pu nous fournir une preuve qu'Igibuni était encore actif après la période Ur III susienne bien qu'il n'apparaisse plus dans les textes de cette époque provenant du chantier B (cf. *MDP* 54 et 55).

6. *MDP* 18, 121

Sur la deuxième ligne de la tranche latérale nous lisons: 'mu' ús.sa é.kišib.ba gibil ba.dù «L'année après l'année où le nouveau «é.kišib.ba» fut construit», cf. *supra*.

7. *MDP* 18, 122

Au revers nous lisons: mu ús.sa é.kišib.'ba gibil' ba.dù «L'année après l'année où le nouveau «é.kišib.ba» fut construit», cf. *supra*.

8. *MDP* 18, 123

Au revers nous lisons: mu ús.sa zi-da-na ba.'hul' «L'année après l'année où (la ville de) Zidana fut détruite». Ce nom est attesté également dans *MDP* 18, 124 (cf. *infra*). Pour Zidana, cf. *RGTC* 11 *sub* *Zidanu, *EW* II *sub* zi-da-na «aE Ortsname» et *RGTC* 2 *sub* Zidan(i)um/Zitian. Gelb (1944: 104) note les fréquentes mentions d'un certain Raši de Zidanum^{ki} dans les

tablettes Ur III mésopotamiennes. Il fait le rapport avec le texte Ur III de Suse *MDP* 10, 125 (A-S 5) dans lequel apparaît aussi un Ras/ši (*ra-si*)¹⁸ au nom duquel Adalal, le messager du roi, reçoit 300 litres d'huile de la part de Zarīqum¹⁹. Ce texte mentionne encore deux toponymes: 'šà' *a-bu-la-at* / ^{ki} *in-ši-ti-an*^{ki} (ll. 6-7), lus ainsi par Vallat dans *RGTC* 11 (*sub* *Abullāt et *Inšitian). Si nous savons cependant que Raši est originaire de Zidanum, une lecture 'šà' *a-bu-la-at* / ^{ki} *in zi-dī-an*^{ki} avec *in* comme forme raccourcie de *ina* «dans»²⁰ serait sans doute plus indiquée. Il nous semble évident qu'il s'agit bien du même Raši dans les textes Ur III de Mésopotamie et dans *MDP* 10, 125. Notons en outre que dans *TCL* 2, 5508 i et ii un certain Še-bi, messager de Raši est désigné comme lú SU (Gelb 1944: 100). Gelb (1944: 104) cite les diverses possibilités pour une localisation du Zidānum des sources mésopotamiennes Ur III, parmi lesquelles — à côté de la ville phénicienne de Šidon, du Tidānum amorrite et du Zitānu au nord de la Syrie — il donne le Zidana de notre nom d'année («mentioned in a date formula of an Elamite king» avec renvoi à Cameron 1936: 64). Notre nouvelle lecture de *MDP* 10, 125: 7 montre que Zidānum, Zidian et Zidana pourraient bien être des variantes d'un seul et même toponyme. La localisation de Zidānum/Zidian/Zidana reste encore inconnue²¹, mais il devient vraisemblable qu'un souverain Simaški ait conquis cette ville (ou ce territoire) sur les sumériens d'Ur III. Le sceau du scribe Šū-Nanaya, déroulé sur les deux tablettes (*MDP* 18, 123 et 124), nous permet de conclure qu'il s'agit peut-être d'un nom d'année d'Idadu, car Šū-Nanaya était un serviteur de celui-ci. Cinq lignes de ce sceau sont préservées, qu'on peut probablement compléter avec une sixième: (1) *i-da-du* (2) énsi mūš.eren^{ki} (3) *šū-na-na-a* (4) dub.sar (5) dumu lú-dnin.šubur (6) [ir-zu] «(1) Idadu (2) énsi de Suse (3) Šū-Nanaya (4) le scribe (5) fils de Lu-Ninšubur (6) [(est ton serviteur)]», en parallèle avec e.a. le sceau du courrier Kuk-Inšušinak

¹⁸ Probablement à lire *ra-ši* (avec l'usage paléo-accadien du signe SI pour *ši*), cf. Gelb 1957: 236 *sub* RŠ₇ Sarg. and Ur III PN's: Ra-ši et Ra-si.

¹⁹ *MDP* 10, 125: 1-5: '1'1'.0.0.0. ì.giš gur 'mu' *ra-si-še* 'ki' *za-rí-iq-ta a-da-làl* lúkin.gi₄.a lugal šu ba.an.ti.

²⁰ Cf. *CAD* I/J *sub* *ina* (*in*) prep.; *in*, *on*, *from*, *through*; ...; *in* in OAKk.,

²¹ Selon *RGTC* 2 (*sub* Abullāt) et 11 (*sub* *Abullāt) Abullāt est associé avec Kimaš (qui se situe sur le plateau iranien (région d'Anarak?) selon Vallat dans *RGTC* 11 *sub* *Kimaš) dans Gudéa St. B vi 21. Vu l'association d'Abullāt avec Zidian dans *MDP* 10, 125 (ll. 6-7 *a-bu-la-at*^{ki} *in zī-dī-an*^{ki}), Zidānum/Zidian/Zidana doit se situer dans ces environs.

sur *MDP* 28, 548 (= *MDP* 43: n°1678): (1) *i-da-du* (2) énsi mûš.eren^{ki} (3) *ku-uk-^dmûš.eren* (4) rá.gab (5) ír.zu²² «(1) Idadu (2) ensi de Suse (3) Kuk-Inšušinak (4) courrier (5) (est) ton serviteur». Mais s'agit-il d'Idadu I (= Idadu-Inšušinak, père de Tan-Ruḫurater, à situer chronologiquement peu après I-S 3) ou d'Idadu II (fils de Tan-Ruḫurater et frère de Kindattu à situer chronologiquement entre *ca.* 1910 et 1895 av. notre ère²³) tous deux des rois Simaškéens?

9. *MDP* 18, 124

Au revers nous lisons: mu ús.sa 'zi'-[*da-na*] ba.'ḫul' «L'année après l'année où (la ville de) Zidana a été détruite», cf. *supra*.

10. *MDP* 18, 125

Au revers nous lisons: mu é^dmûš.eren ([...]) an.na ba.dù «L'année où le temple d'Inšušinak ([...]) an.na fut construit». Comme ce nom d'année est écrit sur différentes lignes et la tranche latérale est cassée, il n'est pas impensable qu'il y avait encore un ou deux signes après^dmûš.eren. Le temple d'Inšušinak à Suse étant connu, en ce temps, comme é.ki.kù.an.na²⁴ il ne nous semble pas impossible que les signes an.na à la l. 6 étaient précédés par ki-kù- à la l. 5 ce qui nous permet de reconstruire: (5) mu é^dmûš.eren [ki.kù]. / (6).an.na ba.dù «L'année où le temple d'Inšušinak [ki.kù].an.na a été construit». Une inscription bilingue (sumérienne-accadienne) d'Idadu II (Malbran-Labat 1995: 26-28, n°s 6-7) montre qu'il a construit un nouveau mur en briques cuites à l'arrière de l'Ekikuanna²⁵ pour Inšušinak. Notre nom d'année pourrait donc renvoyer à cette construction par Idadu II ou alors d'autres travaux du même genre par un de ses prédécesseurs.

²² Lecture adaptée par nous aux nouvelles lectures des signes (cf. la copie dans *MDP* 43, Pl. 33 et la photo sur la Pl. 157). Potts (1999: 147-148 Table 5.5) attribue ce sceau à Idadu II, Seidl (1990), par contre, à Idadu I.

²³ *Contra* Steve, Vallat, et Gasche 2002: 383-384. Selon Vallat (1996: 315-316) les souverains Simaškéens étaient, à partir d'Ebarat II, des vassaux des premiers *Sukkalmah* à Suse à qui ils durent graduellement laisser le pouvoir. Pour une nouvelle hypothèse concernant la chronologie, cf. *MDP* 54: 99-112 et *MDP* 55: Ch. 4.

²⁴ Cf. Malbran-Labat 1995: 26 n°s 6-7 Idadu.

²⁵ Malbran-Labat 1995: 26 n°s 6-7: 11-13: é gar₈ gibil sig₄ al.lu.ra é.ki.kù.nun.na (variante: é.ki.kù.an.na) egir.ra mu.na.dù // *i-ga-ra-am e-eš-ša-am ša e-pi-ir-ti-im* é.ki.kù.nun.na (variante: é.ki.kù.an.na) *wa-ar-kà-'su' i-pu-uš*.

11. *MDP* 18, 127

Au revers nous lisons: [mu (...)] ^{urudu}alan²⁶ 4^{!!} (5[?]).bi ba.dím (?)²⁶ «[L'année (...)] où quatre statues en cuivre furent façonnées». C'est là peut-être une forme abrégée d'un nom d'année de Nūr-Adad de Larsa (1770-1755 av. notre ère) l) ou m), ou éventuellement de Rīm-Sîn (1726-1667 av. notre ère) 3: Nūr-Adad l): mu ^{urudu}alan 4.bi é ^{dutu}.šè ba.dím "Year 4 statues in copper were made for the temple of Šamaš" et m): mu ús.sa ^{urudu}alan 4.bi é ^{dutu}.šè ba.dím "Year after the year 4 statues in copper were made for the temple of Šamaš"; Rīm-Sîn 3: mu 4 ^{urudu}alan ku-du-ur-ma-bu-uk é ^dnanna.šè ì.ni.in.ku₄.re ù é ^dnin-MAR.KI šà aš-dub-ba mu.un.dù.a "Year in which (Rīm-Sîn) brought 4 statues in copper representing Kudur-Mabuk into the temple of Nanna and built the temple of Nin-MARKI in Ašdubba" (d'après Sigrist et Damerow). A comparer les deux, la ressemblance avec l'année de Nūr-Adad est bien plus grande. Mais, comme nous n'avons, à ce jour, aucune autre indication qu'un de ces deux rois aurait contrôlé Suse à un certain moment, il faut prendre en compte que ce pourrait être un nom d'année d'un souverain local. La présentation de quatre statues au temple serait alors un usage connu à plusieurs endroits. Nous renvoyons à ce propos, à notre n°15 où il est également question de quatre statues (d'argent) et où il s'agit clairement d'un nom local.

12. *MDP* 22, 22

À la tranche latérale, nous lisons: mu uru ká «L'année où la ville de KÁ». Sans doute il s'agit ici d'une abréviation d'un nom d'année, puisque «mu uru ká» en soi ne signifie pas grand chose. A quoi renvoie cette abréviation? Il est bien entendu exclu qu'il s'agisse de «ká.dingir.ra^{ki}»²⁷. Il doit

²⁶ Lecture hypothétique, basée sur *MDP* 28, 505: 7-8: mu ús.sa alan kù.babbar 4(écrit 2+2).bi ba.dím.

²⁷ Notons que *RGTC* 11 *sub* Babil, *Babilu, ** Bābiruš ne donne pas de références Ur III ou (début) paléo-babylonien avec une graphie ká.dingir.ra^{ki} pour la ville de Babylone. Cf. *MDP* 28, 551: 9: 10 gín dam.gàr šà bi-it ħul-bi šà te₄(NE)-in-ti-i^{ki} «10 siqles pour le marchand de Bīt-Ĥulbi de te₄(NE)-in-ti-i^{ki}». Selon George (1992: 238), te₄(NE)-in-ti-i^{ki} pourrait être équivalente à la graphie «tin.tir^{ki}» pour la ville de Babylone. Pour Bīt Ĥulbi, cf. *RGTC* 11 *sub* *Bīt-Hulbi et *EW* I *sub* bi-it.hul-bi: "Ortsname aus aE Zeit, wohl in der Susiana gelegen; doch gab es offenbar einen gleichlautenden Ort in Babylonien". Si te₄(NE)-in-ti-i^{ki} était ici une graphie de la ville de Babylone, le bi-it ħu-ul-bi pourrait rappeler le é ħu-ul^{ki} connu de *ARM* 2, 24: 24' qui, selon *RGTC* 3 (*sub* Eħul) doit être mis en rapport avec l'Irmina. Cf. pour ce texte notre étude sur la ville de Dūrum dans les textes de Suse «Another Brick in the Wall. Dūrum in the Old-Elamite Susa texts», à paraître dans *Akkadica* 128.

s'agir d'une autre ville dont le nom commence avec Bāb- «Porte de-», cf. *RGTC* 3: 32. Malheureusement ces trois signes ne sont pas suffisants ni pour identifier la ville ni pour assigner le nom d'année.

13. *MDP* 24, 385

Au revers, nous lisons: mu^{urudu} alan *hu-ut-ra-an-te-em-ti* ba.dím «L'année où la statue en cuivre de *Ḫutran-temti* fut façonnée.» Selon la «Généalogie de *Šilḫak-Inšušinak*» (König 1965, 48: 2, 48a: 3 et 48b: 3, cf. aussi Steve, Vallat et Gasche 2002: 436-439) *Idadu* — en bonne logique *Idadu* I (-*Inšušinak*), le 7^{ème} roi de la dynastie *simaškéenne*, père de *Tan-Ruḫurater*, cf. aussi *MDP* 55: Ch. 4 — était le «fils légitime» (*ruḫu-šak*) de *Ḫutran-tepti*. Nous pouvons donc supposer que son «fils légitime» (*Idadu* I) ait fait façonner une statue en cuivre de *Ḫutran-tem/pti*, et qu'il s'agit donc d'un nom d'année d'*Idadu* I. Notons de surcroît que ce texte mentionne un certain *Pundudu* (*pu-un-du-du*) comme récipiendaire. Ce pourrait être le même que le *Pududu* (*pu-u-du-du*) serviteur d'*Idadu* de *MDP* 14: 29: (1) *i-da-du* (2) *ensí* (3) *mùš.eren^{ki}* (4) *pu-u-du-du* (5) *ir.zu* «(1) *Idadu* (2) *ensi* (3) de Suse (4) *Pududu* (5) est ton serviteur». Selon Steve, Vallat et Gasche (2002: 437-438) il s'agit ici d'un nom d'année typiquement *Ur III*. Combinant cela avec leur hypothèse selon laquelle il y avait deux *Tan-Ruḫurater* — *Tan-Ruḫurater* I, père de *Kindattu*²⁸, antérieur à la chute d'*Ur III*, pas mentionné dans la «Liste Royale»²⁹ et *Tan-Ruḫurater* II, fils d'*Idadu*³⁰ et 8^{ème} roi de la dynastie *simaškéenne* selon la «Liste Royale» — ils considèrent *Tan-Ruḫurater* I comme un haut fonctionnaire du temps de la domination *Ur III*. Il va de soi que notre nom d'année est typiquement *Ur III* comme il est typiquement paléo-babylonien ou tout simplement de modèle mésopotamien. Il est cependant tout aussi clair que ce n'est pas un nom d'année d'un des rois *Ur III* car dans ce cas ce devrait être un nom

²⁸ Selon «la généalogie de *Šilḫak-Inšušinak*», cf. König 1965, 48: 2, 48a, 3 et 48b, 3: *Kindattu šak Tan-Ruḫurater* «*Kindattu* fils de *Tan-Ruḫurater*».

²⁹ La raison en est, selon Steve, Vallat et Gasche (2002: 437): «... parce qu'il n'aurait pas exercé le pouvoir suprême (ce qui confirme bien que *Kindattu* est un collatéral). Il est donc vraisemblable que ce *Tan-Ruḫurater* était le contemporain de *Lurrak(?)*-*luhhan* (...), prédécesseur de *Kindattu* sur la «Liste Royale», et mort sans héritier apte à régner. Il faut également en conclure que ce *Tan-Ruḫurater* I est décédé avant la chute d'*Ur* puisque le pouvoir est alors assumé par son fils *Kindattu*».

³⁰ Selon «la généalogie de *Šilḫak-Inšušinak*», cf. König 1965, 48: 2, 48a, 3 et 48b, 3: *Tan-Ruḫurater šak Idadu* «*Tan-Ruḫurater* fils d'*Idadu*».

d'année d'Ibbi-Sîn et ses noms d'année sont (pratiquement?) tous connus. Ce nom d'année ne correspond en tous cas à aucun des noms d'année connus d'Ibbi-Sîn, et il n'y a rien dans sa formulation qui permettrait de le rattacher à ce roi, bien au contraire. Il nous semble fort improbable qu'Ibbi-Sîn, alors que l'empire Ur III était en chute libre et que l'Elam s'en détache au cours de sa troisième année de règne, ait fait ériger une statue du roi simaškéen Ĥutran-tem/pti. En ce qui concerne le problème des Tan-Ruĥurater I et II cf. *MDP* 55: Ch. 4.

14. *MDP* 28, 473

Au revers, nous lisons: 'mu ^{id}za-bu-um' [...] «L'année où le Zabum [...]». Selon *RGTC* 11 (*sub* *Zabum) il s'agit ici d'un canal plutôt que du Zab. Les indications géographiques Zabum (cf. o.a. *RGTC* 3 *sub* Zabûm), Zab (cf. *RGTC* 3 *sub* *Zaibum) et Sabum (cf. *RGTC* 11 *sub* *Sabum) sont parfois confondues. Foster (1982: 45-50) identifie le *za-bûm* de ses textes paléo-accadiens d'Umma avec le *sa-bum/bu-um* de l'Iran du nord-ouest. Dans son compte rendu de ce livre, Steinkeller (1987: 185-188) réfute cette proposition parce que le *za-bûm* paléo-accadien est toujours écrit avec ZA, en opposition avec le *sa-bum/bu-um* iranien, toujours écrit avec SA (à partir de la période sargonique jusqu'au paléo-babylonien compris). En outre, Steinkeller argumente que les textes de Foster montrent que son Zabum avait un KA «une bouche, une ouverture, une entrée» ce qui fait que ce Zabum ne peut être un toponyme, mais un hydronyme (ou éventuellement un bâtiment comme le fait remarquer Steinkeller bien qu'il soit d'avis lui-même que c'est un canal). Il donne les attestations de cours d'eau du même nom: (1) le *za-bi-im* (gen.) à Gasur (Nuzi), (2) le ^{id}za-bu-um dans les environs de la Sippar paléo-babylonienne, et (3) le *e-za-bu-um* des listes lexicales (cf. Steinkeller 1987: 187, note 12 pour les références). Il va de soi qu'il ne s'agit pas, dans notre nom d'année, de la ville ou du territoire élamite de Sabum³¹ mais bien d'un cours d'eau appelé Zabum. Il n'est pas possible de déterminer s'il s'agit d'un des canaux de ce nom énumérés plus haut ou alors d'une rivière ou d'un canal local du même nom.

³¹ Cf. notre étude sur la ville de Dūrum dans les textes de Suse «Another Brick in the Wall. Dūrum in the Old-Elamite Susa texts», à paraître dans *Akkadica* 128, pour le toponyme Sabum.

15. *MDP* 28, 505

Au revers, nous lisons: mu ús.sa alan kù.babbar 4.bi ba.dím «L'année après l'année où quatre statues en argent furent façonnées». Comme il a été remarqué plus haut, trois noms d'année de Larsa sont connus, dans lesquels il est question de quatre statues (Nūr-Adad I) et m), et Rīm-Sîn 3). Ce sont cependant toutes des statues en cuivre et non en argent. D'autre part nous avons deux indications quant à la date probable de ce texte: ll. 4-5: šu.ti.a NP é *tan-^dru-^hu-ra- / -te-er* «reçu par NP (pour? / dans?) la maison (palais?) de Tan-Ruḫurater» et le sceau déroulé sur cette tablette. Trois lignes seulement de sa légende sont conservées: (1) ^d[...- / ^dEN].ZU (2) lugal kala.ga (3) lugal uri₅ / ^{ki}.ma, sans doute à compléter par (4) lugal an.ub.da.límmu.ba (5) NP (6) profession (7) patronyme (8) fonction (9) ír-zu, selon l'usage typique des inscriptions votives sur les sceaux des gouverneurs et autres personnes au service des rois d'Ur III³². Comme la première ligne de ce sceau se termine certainement sur —Sîn, il n'y a que trois rois possibles: Amar-Sîn, Šū-Sîn ou Ibbi-Sîn. Vu la mention dans le texte de la maison de Tan-Ruḫurater (I selon Steve, Vallat et Gasche (2002: 437) ou II, le 8^{ème} roi de la dynastie simaškéenne, cf. *supra*), seul le dernier roi d'Ur III, Ibbi-Sîn, entre en ligne de compte (déjà restitué par Scheil dans *MDP* 28: 121). La première ligne peut donc être complétée comme suit: ^d[i-bí- / ^dEN].ZU. Il est fort dommage que le propriétaire du sceau nous soit inconnu. Nous pourrions éventuellement établir un lien avec la légende sur une bulle de Suse publiée dans Scheil 1926, où les signes et leur agencement sur les trois premières lignes concordent parfaitement avec notre sceau. Cette légende est la suivante: (1) ^di-bí- / ^dr'EN'.ZU (2) lugal kala.ga (3) lugal 'uri₅' / ^{ki}.ma (4) ur-'kù.nun'.na?' (5) dub.[sar] (6) dumu lú-'a?'-[...] (7) ír.zu «(1) Ibbi-Sîn (2) roi puissant (3) roi d'Ur (4) Ur-'kù.nun.na' (?) (5) scribe (6) fils de lú-'a?'-[...] (7) (est) ton serviteur». Malheureusement Scheil, dans *MDP* 28: 122, ne donne que ce qui reste de la légende du sceau et pas les figures ou la scène, ce qu'il a bien fait pour le sceau du scribe Ur-'kù.nun.na' (?). La collation du sceau de *MDP* 28, 505 devra permettre de décider s'il s'agit du même sceau, à condition qu'il y ait encore des restes de figures sur la tablette. Comme il n'y a pas d'autre personne dans les textes de Suse avec le nom Ur-'kù.nun.na' (?), il est bien possible que ce soit le même sceau. Steve, Vallat et Gasche (2002: 437, cf.

³² Cf. Frayne 1997: 342-357 et 376-389.

aussi *supra*) considèrent cette tablette comme une des preuves de l'existence de Tan-Ruḫurater I haut fonctionnaire sous l'empire Ur III. Bien que cela ne soit pas impossible, nous sommes d'avis qu'il n'y a, pour le moment, pas de certitude qu'il y ait eu deux Tan-Ruḫurater et que le premier soit mentionné ici (cf. *MDP* 55: Ch. 4). Il est en tout cas fort remarquable qu'une tablette dans laquelle on mentionne la maison de Tan-Ruḫurater soit scellée par un serviteur du roi Ur III. Cela implique en tous cas — si nous partons de l'existence d'un seul Tan-Ruḫurater, à savoir, le 8^{ème} roi de la dynastie simaškéenne — que nous devons dater Tan-Ruḫurater pendant le règne d'Ibbi-Sîn (ou éventuellement juste après si nous tenons compte du fait que c'est le fils d'un serviteur d'Ibbi-Sîn qui a scellé la tablette). Se pose alors la question de savoir si nous devons dater Tan-Ruḫurater avant la fin de I-S 3 (*ca.* 1934-1932 av. notre ère), lorsque Ur III avait encore le pouvoir à Suse ou entre I-S 4 et I-S 24³³ (1931-1911 av. notre ère), lorsqu'Ibbi-Sîn était bien encore officiellement roi mais que l'empire d'Ur III était en train de sombrer et qu'il n'avait sans doute plus de pouvoir effectif à Suse. Comme nous savons que Tan-Ruḫurater avait épousé Me-Kūbi, fille de Bilalama, roi d'Ešnunna³⁴, et que ce Bilalama était, selon Jacobsen (1940: 149), du moins partiellement contemporain de Šū-ilīšu (1888-1879 av. notre ère) et Iddin-Dagan (1878-1858 av. notre ère) de Larsa, la fin du règne d'Ibbi-Sîn ou/et peu après semble indiqué.

16. *MDP* 28, 514

Au revers, nous lisons: mu ús.sa 'ki' MAR.TU im.'gin'.na «L'année après l'année où il est venu du pays amorite». Steve, Vallat et Gasche (2002: 437) sont d'avis qu'il s'agit ici du 5^{ème} nom d'année de Šū-Sîn³⁵. Cela nous semble fort improbable car le 5^{ème} nom d'année de Šū-Sîn fait clairement

³³ Année où les élamites simaškéens conquièrent Ur et emmènent Ibbi-Sîn comme prisonnier à Anšan (Potts 1999: 139, Table 5.2.), cf. aussi les noms d'année I-S 23: mu ^di-bi-^dEN.ZU lugal uri^{ki}.ma.ra ugu.dul⁵.bi dugud kur.bé mu.na.e.ra “Year the stupid monkey in the foreign land struck against Ibb-Sîn, the king of Ur” et I-S 24: mu ^di-bi-^dEN.ZU lugal uri^{ki}.ma.ke₄ ... bí.ra “Year Ibbi-Sîn, the king of Ur, ... struck” (traductions de Sigrist et Damerov).

³⁴ Cf. Malbran-Labat 1995: 25, n° 5 (avec références) et Potts 1999: 147, Table 5.5. *sub* 8. Tan-Ruhurater.

³⁵ Š-S 5: mu ús.sa ^dšu-^dEN.ZU lugal uri^{ki}.ma.ke₄ bàd MAR.TU mu-ri-iq ti-id-nim mu.dù “Year after the year Šū-Sîn, the king of Ur, built the Amurru wall (called) *Muriq-tidnim* / holding back the Tidanim” (traduction de Sigrist et Damerov).

état du *mur* des Amorites (bàd MAR.TU) qui a été *construit* (mu.dù), alors que le nom d'année de *MDP* 28, 514 parle du *pays* Amorite — le signe après mu ús.sa étant cassé mais certainement à lire 'KI', cf. notre copie — et du verbe *aller* (im.'gin'.na).

17. *MDP* 55, 50

Au revers de cette tablette, qui est fort abîmée et illisible pour le reste, nous lisons: (7) [mu ús].sa níg.ga é 'x' ([...]) (8) 'ba' še šu ra ([...]) «L'année après l'année (où) le trésor/les biens du temple/de la maison ...». Malheureusement, ce qui reste ne suffit pas à comprendre de quoi il s'agit. Il n'y a pas d'autre nom d'année qui soit comparable à celui-ci, à moins que nous lisions le 'x' à la ligne 7 comme 'kišib' et qu'il n'y ait rien d'autre avant le 'ba' de la ligne 8, ce qui donnerait alors é.'kišib' /.'ba' et permettrait d'établir un rapport avec le nom d'année de *MDP* 18, 120, 121 et 122: mu ús.sa é.kišib.ba gibil ba.dù. Avec quelque imagination, on pourrait considérer les signes še-šu comme une erreur du scribe pour eš-šu, ce qui nous donnerait é.'kišib' /.'ba' eš'-šu, ce qui correspondrait parfaitement au é.kišib.ba gibil de *MDP* 18, 120, 121 et 122, car l'accadien *eššu(m)* est la traduction du sumérien gibil «nouveau».

C. Conclusions

Nous avons vu dans ce qui précède qu' à Suse, le système des noms d'année — utilisé par les rois Ur III pendant l'occupation de la ville par les Sumériens (PE IIA, jusqu'à ca. I-S 3) — est continué sous la dynastie des Simaškéens (PE IIB). Mais, à part l'exception citée, cet usage n'est pas poursuivi sous les *Sukkalmah*.

D'abord, ces noms d'année eux-mêmes peuvent nous informer quelque peu sur l'histoire de la période simaškéenne, comme chaque année de règne est désignée par une formule relatant un événement survenu l'année précédente ou l'année même. En plus, l'évolution de cet usage nous permet de penser à une rupture entre la dynastie des Simaškéens et le *Sukkalmahat* — au moins en ce qui concerne le système de datation — et de questionner l'hypothèse selon laquelle la relève de la dynastie simaškéenne par la lignée des *Sukkalmah* s'est passée sans heurts.

Comme en Mésopotamie, les événements auxquels on réfère dans les noms d'année simaškéens sont des travaux de construction, des opérations

militaires, le creusement de canaux, la dédicace des trônes, des emblèmes ou des statues à une divinité, l'inauguration d'un nouveau souverain et l'installation de la justice au pays (cf. Horsnell 1999: 130). A part les trois (ou deux) noms d'année connus du souverain simaškéen Ebarat I (De Graef 2004), nous disposons de treize noms d'année que nous pouvons attribuer à cette dynastie.

Deux d'entre eux réfèrent à la construction d'un bâtiment: (a) le nouveau «é.kišib.ba» (n^{os} 5, 6 et 7) et (b) le temple d'Inšušinak ([...]) an.na (n^o 10). Deux d'entre eux réfèrent à une opération militaire: (a) la destruction de la ville de Zinkiri (n^o 4) et (b) la destruction de (la ville de) Zidana (n^{os} 8 et 9). Trois d'entre eux parlent de la construction des statues: (a) quatre statues en cuivre (n^o 11), (b) une statue en cuivre de Ĥutran-temti (n^o 13) et (c) quatre statues en argent (n^o 15). Deux parlent (du creusement) de canaux: (a) le «creusement» de la plaine de la ville de Zurumaš (n^o 2) et (b) le canal Zabum (n^o 14). Le n^o 16 parle de quelqu'un qui est venu du pays amorrite. Peut-être ce nom d'année exprime-t-il une menace militaire? Les autres sont trop abrégés ou abîmés pour être intelligibles (n^{os} 3, 12 et 17).

Malheureusement, nous ne savons pas à quels souverains simaškéens ces noms d'année doivent être attribués. Nous ne savons même pas avec certitude combien de souverains simaškéens ont régné à Suse après Ebarat I. L'énumération des douze rois simaškéens de la «Liste Royale» (*MDP* 23: 4 et Scheil 1931) n'est pas chronologique. De plus, cette liste ne donne pas de durée de règne ni d'éventuelles connexions généalogiques entre les souverains. Il s'agit de douze rois simaškéens (et non pas de douze rois *de* Simaški): ils appartiennent bien à la «famille» de Simaški, mais ils n'ont pas régné successivement à Simaški. Nous savons que les trois premiers souverains simaškéens (Girname, Tazitta I et Ebarat I) étaient au moins partiellement contemporains (Stolper 1982) et qu'Ebarat I a régné à Suse après I-S 3 pendant au moins deux ans (De Graef 2004 et *MDP* 54: 99).

Cinq de nos textes nous donnent des indications en ce qui concerne les souverains simaškéens auxquels les noms d'année pourraient être attribués. Sur les n^{os} 8 et 9, le sceau du scribe Šū-Nanaja est déroulé. Selon son sceau, ce Šū-Nanaja était un serviteur d'Idadu, ce qui nous permettrait d'attribuer le nom d'année des n^{os} 8 et 9 à Idadu. La question se pose alors de quel Idadu il s'agit: Idadu I (= Idadu-Inšušinak, père de Tan-Ruḫurater) ou Idadu II (fils de Tan-Ruḫurater et frère de Kindattu)?

Malheureusement, il n'y a pas de réponse définitive à cette question jusqu'à présent. En ce qui concerne notre n° 10, il est possible de mettre ce nom d'année mémorant une restauration du temple d'Inšušinak à une inscription d'Idadu II. Dans le nom d'année du n° 13, il est question de la construction d'une statue de ̜utran-tem/pti en cuivre. Selon la «Généalogie de Šilḫak-Inšušinak», Iḏadu I était le fils légitime (*ruḫu-šak*) de ce ̜utran-tem/pti, ce qui nous permettrait d'attribuer ce nom d'année à Iḏadu I. Finalement, notre n° 15 parle de la maison (du palais?) de Tan-Ruḫurater, ce qui nous permettrait de dater ce texte sous son règne et par conséquent de lui attribuer ce nom d'année.

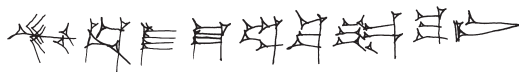
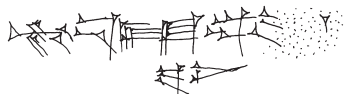
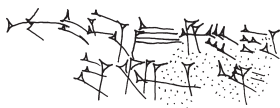
Nous pouvons donc conclure qu'à part d'Ebarat I, dont nous savons avec certitude qu'il a utilisé des noms d'année, il y a trois souverains simaškéens à qui nous pourrions attribuer des noms d'année: Iḏadu I, Tan-Ruḫurater et Iḏadu II. Comme le nom d'année le plus récent est celui des *Sukkalmaḫ* Pala-iššan et Kuk-Kirwaš, il nous semble probable qu'Ebarat II, Šilḫaḫa et Atta-ḫušu, les figures de transition entre la dynastie des Simaškéens et le *Sukkalmaḫat* (et de qui nous savons avec certitude qu'ils ont régné à Suse) auraient aussi utilisé ce système de datation.

Il est néanmoins clair que l'usage des noms d'année s'est arrêté tout au début du *Sukkalmaḫat*, ce qui indique une rupture avec la dynastie des Simaškéens. Cela ne doit pas nous étonner. Nous voyons une même évolution en Mésopotamie. À part les quelques noms d'années qui sont déjà connus de la dernière partie de la période dynastique archaïque, le système devient la datation officielle sous la dynastie paléo-accadienne en Mésopotamie. Ce système continue pendant la période Ur III jusqu'à la fin de la période paléo-babylonienne (Horsnell 1999: 124). Dès la dynastie cassite, les années de règne sont exprimées en chiffres. Comme chez les premiers *Sukkalmaḫ*, les premiers souverains cassites (jusqu'à Kurigalzu I?) ont continué à utiliser l'ancien système des noms d'année avant de passer définitivement à un nouveau système (cf. Horsnell 1999: 124). Un autre exemple d'une même évolution sont les noms d'année *post* paléo-babyloniens, trouvés dans les niveaux III et II à Tell Muhammed (Gasche, Armstrong, Cole et Gurzadyan 1998: 84-87).

D. Copies

n° 2 (*MDP* 10, 98)



n° 3 (*MDP* 18, 84)n° 5 (*MDP* 18, 120)n° 6 (*MDP* 18, 121)n° 7 (*MDP* 18, 122)n° 8 (*MDP* 18, 123)n° 9 (*MDP* 18, 124)n° 10 (*MDP* 18, 125)n° 11 (*MDP* 18, 127)n° 12 (*MDP* 22, 22)



n° 16 (*MDP* 28, 514)

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DECONSTRUCTING THE DESTRUCTION OF HASANLU: ARCHAEOLOGY, IMPERIALISM AND THE CHRONOLOGY OF THE IRANIAN IRON AGE

BY

Peter MAGEE
(Bryn Mawr)

Abstract: The destruction of Hasanlu IVb at or near 800 BC has remained a fix-point for Iranian and near eastern archaeology for nearly half a century. In this paper the methodological basis for this interpretation are analyzed. Moving from this, a complete stratigraphical and statistical re-analysis of the carbon-14 data from Hasanlu IVB is presented. When combined, these avenues of analysis show that a destruction date in the eighth century BC is not only not negated by the evidence, but jibes with long-held stylistic analysis of some of the Hasanlu IVb artifacts.

Keywords: Hasanlu, Urartu, Assyria, Imperialism, carbon-14, Agrab Tepe.

Introduction¹

Hasanlu is one of the most important sites for examining aspects of cultural change in north-western Iran (fig. 1). Between 1956 and 1977 excavation by the University of Pennsylvania Museum, the Metropolitan Museum of Art and the Archaeological Service of Iran revealed a settlement that contained a wealth of archaeological material². It is a tribute to the skill and meticulous

¹ I began working on this paper in 1997 while a postdoctoral fellow at the department of Near Eastern Languages and Cultures, University of Ghent (Belgium). The excellent library there allowed me to throw myself into the study of the Iranian Iron Age, a subject that was becoming increasingly important for my excavations in southeastern Arabia. Over the years, I have returned to this paper and sent it to scholars for their opinions. Professors Haerinck (Ghent), the late Dr Moorey (Oxford), Dr. Cameron Petrie (Cambridge) and Dr. Lloyd Weeks (Nottingham) all provided very useful criticisms. In addition, I would like to thank two anonymous reviewers who made many useful suggestions for improving the text. Any errors that remain are my sole responsibility.

² For a complete bibliography on work at Hasanlu see Dyson and Muscarella 1989: Footnote 1, Dyson 1997 and most recently Muscarella 2006.

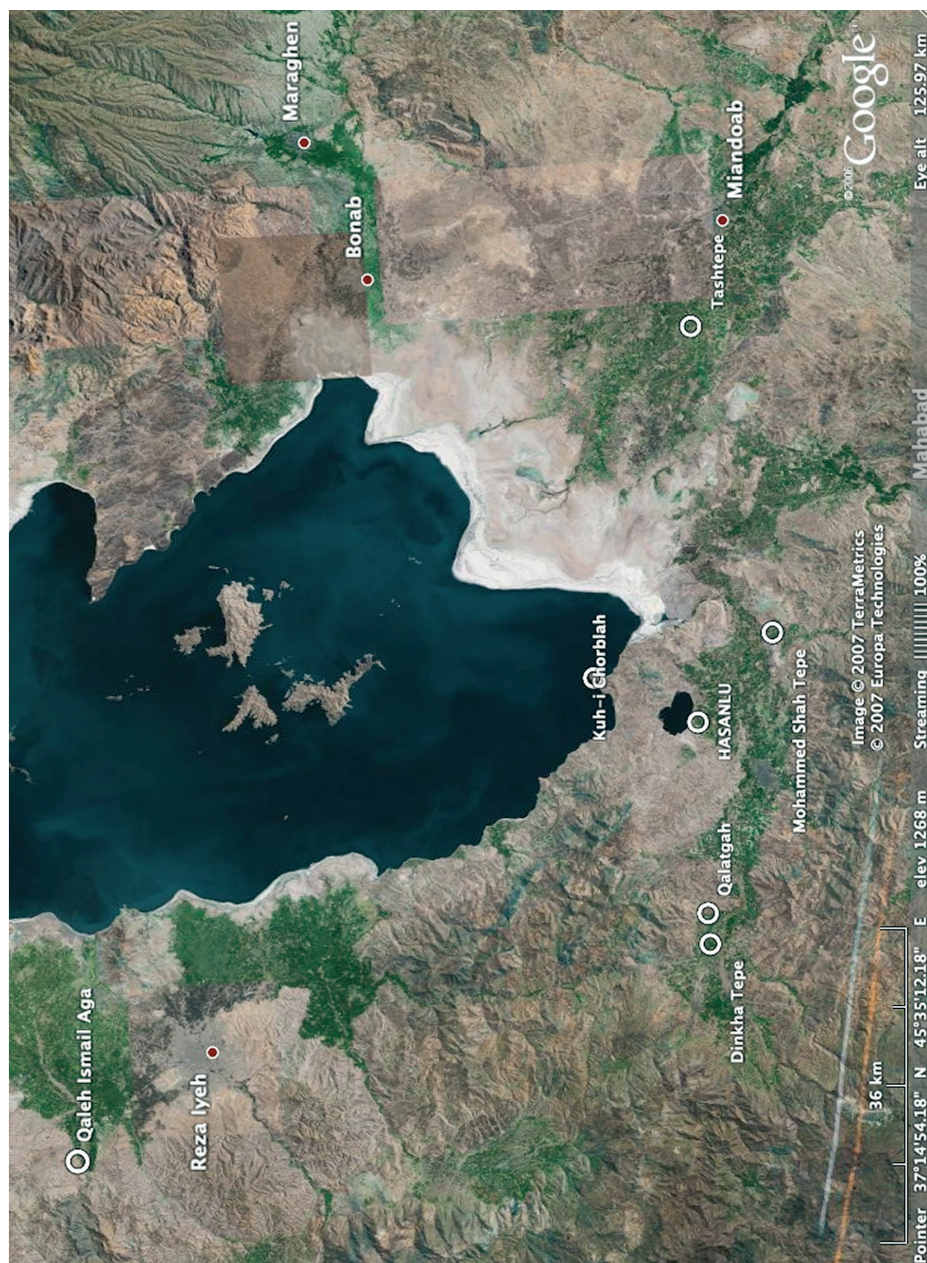


Fig. 1. Northwestern Iran showing the main sites mentioned in the text (Google Earth).

care with which the site was excavated that so much has been written on it and, even after 30 years, it is still possible to suggest new alternatives on its history. In this paper, we examine the Iron Age levels at Hasanlu, particularly period IV, and suggest on the basis of both methodological and substantive issues that a revision to the chronology is necessary.

Why is Hasanlu IV so important?

Hasanlu IV follows from Hasanlu V and consists of three distinct phases labeled IVC, IVB and IVA with IVC as the earliest. In the first two phases the citadel at Hasanlu undergoes a building program in which several large courtyard buildings were constructed. For two reasons these buildings have played a critical role in the scholarship of Iron Age Iran. Firstly, they were destroyed by a fire and thus present a sealed deposit. The buildings were full of artifacts and the destruction was clearly sudden and occurred at a time when people were living in the citadel and had stored both everyday and elite goods. The bodies of the slaughtered inhabitants of Hasanlu were strewn throughout the buildings and are ample testament to the ferocity of this event. Scholars have used the artifacts from this destruction level as an important corpus against which other material, most of which in Iran comes from much less scientific excavations (eg. Sialk), can be compared and dated.

While much (most?) of the Hasanlu IVb material remains unpublished, several important catalogues have appeared and these are, justifiably, the most commonly referenced component of the Hasanlu IVb assemblage. These include publications on ivories (Muscarella 1980), some of the bronze and iron weapons and implements (Muscarella 1988) and the cylinder seals (Marcus 1996). These are exemplary publications and provide the excavation context for each artifact. These publications also make it clear that the vast majority of artifacts come from the southern side of the citadel, particularly Building II. Building III, an isolated columned hall on the northern side of the citadel contained remarkably few artifacts. According to Muscarella (1988: 24), no ivories and only 5 out of the 140 bronze and iron objects presented by him came from Building III (Muscarella 1988: Nos, 1, 2, 4, 39 and 64). Of the 96 cylinder and stamp seals and impressions published by Marcus, only 11 come from Building III, the vast majority, once again, coming from Building II (Marcus 1996). We emphasize this disparity here not simply to show the distributional differences in

the Hasanlu IVb corpus but also because it has serious implications when we consider the chronology of the site.

The second reason why Hasanlu IVb is considered so important is that its destruction has been asserted by the excavators to be irrefutably dated to circa 800BC on the basis of carbon-14 dating. To quote Muscarella and Dyson: 'The general range of IVC-IVB covers the last quarter of the second millennium to 800 BC *and no later*' (emphasis added, Dyson and Muscarella 1989:10). Thus the presentation of artifacts from Hasanlu IVb invariably carry a chronology of before 800 BC and this date is now widely considered the terminus of the Iron Age II period and the beginning date of the Iron Age III period.

The heavy reliance on carbon-14 dating has added much weight to Dyson and Muscarella's arguments in the eyes of other scholars, most of whom prefer to rely on the interpretation of carbon-14 dates than the chronological inferences of the artefacts. For example, Pecorella and Salvini write that "this period (IVb) ended with the sack and the fire of the city. The date of this event is fixed by radiocarbon datings around 800BC" (Pecorella and Salvini 1982: 9); Burney comments that "Historical factors as well as radiocarbon determinations join in indicating such a date. Stylistic analyses of metalwork or other artefacts must defer to such evidence" (Burney 1994b: 32) while Dyson himself and de Schauensee write in their analysis of the horse bits from Hasanlu IVb that "The objects found at Hasanlu are firmly dated by C14 to the ninth century BC; therefore, the chronological span of the parallels usually dated in Assyria and Luristan to the eighth and seventh centuries will now have to be extended back into the ninth century BC" (de Schauensee and Dyson 1983: 76).

As hinted by Burney (above), epigraphic data has also influenced our understanding of the chronology of Hasanlu IVb's destruction. The basic argument attributes the destruction to the campaigns of Ispuini and Menua in 810-805BC (Pecorella and Salvini 1982: 8-10). According to those who follow this interpretation there are three cultural-historical factors that correlate the Hasanlu destruction with these campaigns. These can be summarised as: (1) it was impossible for Hasanlu IVb not to be destroyed given the obvious Urartian military presence in the surrounding areas at Qalatgah, Tastepe and 'Ain-e Rum (Pecorella and Salvini 1982: 9-10); (2) the pro-Assyrian nature of the material culture of Hasanlu and the absence of Urartian material suggests that Hasanlu IVb ended before the advent of Urartian political domination (Dyson & Muscarella 1989: 3, 19); and (3)

that Hasanlu is to be identified with Meshta of the Karagündüz inscription and thus was certainly destroyed in the Ispuini and Menua campaigns.

The combination of carbon-14 and cultural historical data form a neat, self-enclosed argument that has only once been previously challenged. In two papers Medvedskaya suggested that the destruction of Hasanlu IVb should be attributed to Sargon II of Assyria and be dated to 714BC (Medvedskaya 1988, 1991). Her paper brought a swift rebuke from Dyson and Muscarella who re-iterated the case for a c. 800BC date (Dyson & Muscarella 1989). The disparity between these two interpretations was largely a result of the type of evidence on which each argument was based. Medvedskaya focused on artefactual evidence such as helmets, horse-bits and weapons that she suggested were more likely to be eighth than ninth century BC in date. The evidence from carbon-14 determinations was largely ignored. To a large extent, Dyson and Muscarella did not question that some of these artefact styles may date to the eighth century; rather they argued that the stylistic trajectory of the artifacts must be altered according to the carbon-14 dates back into the ninth century BC.

For two reasons we challenge an 800 BC date for the objects that have been published as coming from Hasanlu IVb. Firstly, we examine the methodological basis for the cultural historical arguments that have admittedly been of secondary importance in this debate. Despite this, we believe it is important to review this information since it highlights a major methodological issue in the study of the Iranian Iron Age. Secondly, and most importantly, we re-examine the carbon-14 dates from Hasanlu. These have been at the forefront of the scholarship on this site and we show that not only are the dates of little relevance to the majority of Hasanlu IVb artifacts but they do not, in any case, irrefutably support an 800 BC date.

Cultural-Historical Evidence

The evidence of the various historically attested campaigns of both the Assyrians and Urartians has played a significant role in the interpretation of the archaeological data from Hasanlu IVb. The interplay between material culture, imperialism and Hasanlu's destruction can be distilled into one argument: Hasanlu IVb could not have existed after 800 BC because of the Urartian control of the surrounding region and, related, the "Assyrianizing" character of Hasanlu IVb material culture would not have been tolerated by the Urartians who were engaged with Assyria in a series of devastating wars.

Hasanlu IVB and the Urartian Empire

Pecorella and Salvini write “Qalatgah is only 20 km west of Hasanlu and there are no important geographical barriers between the two cities; it is, therefore, difficult to believe that the Urartians could have built that fortress if the city of Hasanlu and her political and military organisations still existed” (1982:11). This is followed by Dyson and Muscarella (1989: 19) but is left open to question by Burney who raises the possibility that Hasanlu may have enjoyed a degree of independence until being subdued by the campaigns of Argishti I against Mana shortly after 800 BC (Burney 1994b: 32).

The underlying and, we suggest, arguable assumption in these interpretations is that destruction is the only archaeological correlate of political subjugation. It is undeniable given its location, that by 800 BC Hasanlu was under the political domination of Urartu, whether it was destroyed or not. The existence of a fortress at Qalatgah does not, however, necessitate the view that Hasanlu IVb must have been destroyed. Throughout the ninth century BC the Hasanlu citadel was without a continuous fortification wall (Dyson & Muscarella 1989: fn 116). It was indefensible and would have provided little resistance to any military offensive. At the same time, Hasanlu was an economically important polity, the inhabitants of which carried out long-distance trade, manufactured and distributed iron products, and created unique and regionally-based symbols of power and authority. To allow the settlement to continue and to extract economic benefits would seem more advantageous to the Urartians than destroying the settlement.

This was certainly a policy that the Urartians seemed to have implemented elsewhere in the region of Hasanlu. The most obvious example is Dinkha Tepe. Despite the fact that Muscarella states that it was ‘most probably’ destroyed by Urartians around 800BC (Muscarella 1994: 140) there is no compelling evidence for a destruction at this site which also lies within sight of Qalatgah (Muscarella 1994: fn 6). It cannot be argued, as Muscarella has done (Muscarella 1994: fn 6), that the absence of post-Late Western Grey Ware or Iron Age III material at Dinkha Tepe suggests that the settlement did not continue past 800BC since the 800BC end date for LWGW/Iron II material is based on that date serving as the end-date for Hasanlu IVb, the ceramic corpus of which was originally used to define the LWGW horizon (Muscarella 1994: 140; Cuyler-Young 1965: 74-77). Put simply: this argument is circular; there is no independent data that supports the assertion that Dinkha Tepe was destroyed by the Urartians.

An alternative perspective would be to emphasize that the most obvious measure to keep such towns such as Dinkha Tepe and Hasanlu under control was to place within striking distance a fortified garrison that would have served as a reminder of the consequence of revolt. Qalatgah would serve such a purpose. Furthermore, the presence of possible Urartian inspired military equipment at Hasanlu IVb (maceheads and helmets: Dyson and Muscarella 1989: 19) might be interpreted as evidence for a small Urartian garrison within Hasanlu that ensured the loyalty of the local inhabitants.

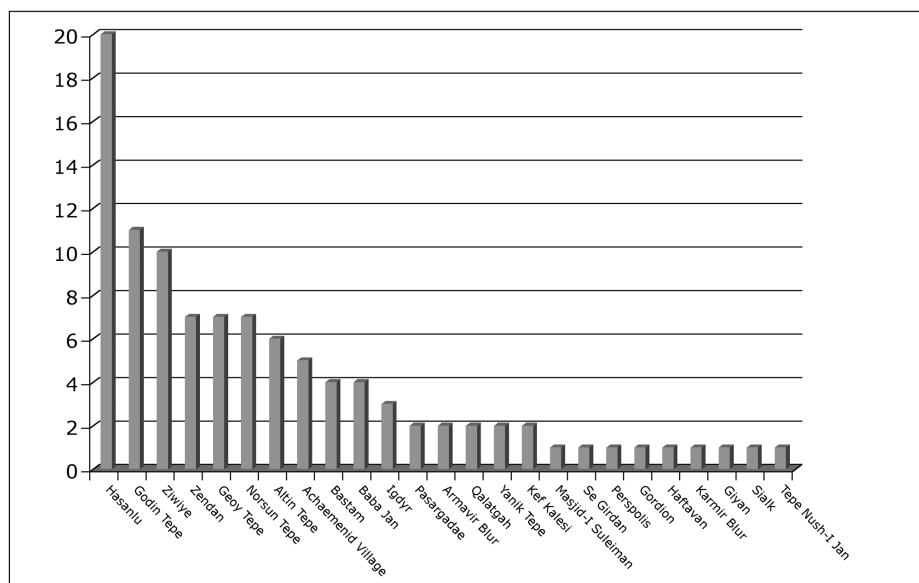
Urartian Imperialism and Material Culture Continuity

Dyson and Muscarella place much emphasis on the presence of Assyrian, or Assyrianising, material culture and the lack of Urartian material culture as evidence that Hasanlu IVb never existed during the period of Urartian control. They write that Hasanlu IVb was ‘full of’ Assyrian related material (Dyson & Muscarella 1989: 3) while of the 7000 objects recovered ‘several *may possibly* have an Urartian connection’ (original italics, Dyson and Muscarella 1989: 19). There is little point in re-analysing all aspects of the material culture at Hasanlu IVb and attempting to quantify to what extent they are influenced by Assyria or no. The issue is whether or not foreign artistic traditions can exist under potentially hostile political hegemony. In the context of ancient Near Eastern imperialism many cases exist that would support a positive response to this question. For example, at the height of the Greco-Persian wars, Greek pottery is imported in some quantity into Achaemenid controlled Egypt and the Levant (Perreault 1986) even into the capital of Susa itself (Beazley 1963: No. 1677). It would seem unlikely that an ivory-worker or a bronze-maker at Hasanlu would radically alter their artistic products because of changes in political control.

An example of the dynamic interplay between material culture and political/ethnic affiliation somewhat close to Hasanlu serves to reinforce this point. Agrab Tepe lies within sight of Hasanlu and was excavated by Muscarella and promptly published (Muscarella 1973). Although the chronology is uncertain it is generally thought that the settlement was founded after Hasanlu IVb was destroyed when the Urartians controlled the Solduz Valley. Muscarella comments on the inhabitants of Agrab Tepe: ‘Were they Urartians? Indeed the ceramic evidence informs us that Urartian pottery was used at Agrab Tepe though it does not tell us that Urartians either built

of staffed the fort; the pottery could have been imported by non-Urartians' (Muscarella 1973: 69). More recently, however, he refers to the site as an 'Urartian settlement' (Muscarella 2006: footnote 2). Muscarella's uncertainty concerning the inhabitants of this site reflect the pitfalls in equating material culture with ethnicity and political affiliation. A quick analysis of the ceramics from Agrab Tepe bears this out. Using as a sample the parallels offered by Muscarella for some of the pottery and accepting, momentarily, that pottery parallels are meaningful in terms of cultural interaction it is abundantly clear that the inhabitants of Agrab Tepe maintained contacts with wide ranging settlements spread throughout Iran and Urartu (Fig. 2)³. Their cultural tendency, therefore was not towards Urartu or Assyria or western Iran; it rather reflected the sort of cosmopolitan *mélange* that one would expect in a region that was so strategically positioned between central Iran, western Iran and the Caucasus.

Only with politically-charged material culture can a case be made that it might be identified with a foreign political framework and thus may need to be, in some way, expunged during imperial episodes. Cylinder seals



³ This is represented graphically by giving one value to each time a parallel was offered by Muscarella for the ceramic parallels on pages 54 to 59.

could possibly form such a group of material since they might be tied to a particular administrative system and are used as such by Dyson and Muscarella to support their case. Two points are relevant here. Firstly, the publication of the cylinder seals from Hasanlu IVb documents only 6 typical or imported Assyrian cylinder seals out of 96 seals and seal impressions (Marcus 1996: 46, Curtis 2005: 115). Given that Assyrian cylinder seals are also reported from the Urartian stronghold of Karmir Blur (Barnett and Watson 1952:145), no emphasis can be placed on these as evidence of the non-Urartian (or Assyrianizing) nature of Hasanlu IVb. In addition, as Curtis, has recently noted, Assyrian material is widespread in western Iran at this time and continues into the Iron Age III period (Curtis 2005: 115-116). Secondly, even if one is to view these 6 cylinder seals as evidence of the pro-Assyrian stance of the elites of Hasanlu, it would be important to note that cylinder seals can continue in use long after dramatic shifts in political affiliation and control. The continued use of Neo-Babylonian stamp seals by early Achaemenid rulers in Babylonia is an obvious example of this phenomenon (Zettler 1979).

Hasanlu=Meshta?

All these arguments remain invalid, however, if one accepts Salvini's identification of Meshta with Hasanlu (Salvini 1979: 177)⁴. This identification is based on the assumption that Hasanlu was one of the largest sites in the region at that time and that it was destroyed around 800BC. On the basis of these arguments such an identification is weak. Burney, *following Dyson*, has noted the existence of many other large mounds in that region which may be identifiable as Meshta (Burney 1994b: 32). The identification of Hasanlu with Meshta based on the destruction of the site can also not be used as evidence since there is no independent data that supports an 800BC date for the destruction (below). Furthermore, the Karagündüz stela of Ispuini and Menua stresses the victory of Meshta as more important than the victories against Qua, Saritu, Nigibi and the attack against Parsua. It notes the use of war-chariots, cavalry and infantry against the city (Pecorella and Salvini 1982: 10). Does such a picture really tally with the destruction of the

⁴ This is not accepted by most scholars. See Kroll (1995: 76) who follows Diakonoff (1985, 69) for an alternate identification of Meshta with Tashtepé.

unwalled citadel of Hasanlu? It is difficult to accept that the taking of Hasanlu IVb would overshadow those of several other cities in the region, some of which may well be larger and more heavily defended than Hasanlu. For example, Kuh-i Chorbah is a major fortified settlement located less than 15 kilometers from Hasanlu. On the basis of the grey ware at the site it is contemporary with Hasanlu IVb (Kleiss 1973: 29-30, Kleiss and Kroll 1977: 78) and while we know little of ancient Nagadeh because of modern building it is likely to have also been a substantial Iron Age settlement.

Summing this evidence together we can see that the tendency to view destruction as the only archaeological correlate of imperialism has had the potential to skew the interpretation of Urartian control of Hasanlu and its environs. As noted by Sinopoli, ancient empires can employ a multitude of strategies to control and exploit conquered areas (Sinopoli 1994: 169-172) and initially destroying settlements would seem to be one of the less productive techniques for doing so. In reference to the Urartian Empire, these issues have been illuminated in a magisterial fashion by Zimansky (1995) who noted that 'the apparent coherence of Urartian material culture is an illusion created by our own scholarly priorities' (Zimansky 1995: 104). Having stated this, he dismisses, however, a post-800 BC destruction for Hasanlu saying that its continued existence past the time the Urartians controlled the Solduz Valley would speak to 'even more internal diversity in Urartu than I dare argue' (Zimansky 1995: footnote 5).

Of course, there is no question that Hasanlu is destroyed and the weight of epigraphic evidence would point to the Urartians who controlled the region of Hasanlu for some of the eighth century BC. The question remains, however, when does the destruction take place? To answer this we need to examine the relevant carbon-14 data.

Radiocarbon Data

Dyson and Muscarella's suggestion that all forms of other evidence must defer to that provided by carbon-14 dates is, in our opinion, the only valid scientific approach for assessing the destruction of Hasanlu. Carbon-14 dates provide unbiased results of the age of a charcoal sample. A review of the carbon-14 data from Hasanlu suggests, however, that those who have accepted as fact that the Hasanlu IVb assays irrevocably argue for a c.800 BC destruction have neither considered the archaeological or statistical implications of the radiocarbon data.

Hasanlu IVb dates (Table 1)

Thirty carbon-14 dates from Hasanlu IVb have been published⁵. Only a handful of these might be considered as arguably relevant to the *destruction* of this level since most of the charcoal samples relate to the *construction* of the buildings. This is clearly noted by Muscarella and Dyson and is important since, by and large, these dates reinforce the conclusion that some of the buildings were probably built by c. 1000 BC. To date a *destruction* of a settlement it is necessary to focus on short-lived organic samples (eg. seeds) that are likely to have exited the carbon cycle, for example have been harvested, and entered the archeological record shortly before the destruction. Muscarella and Dyson publish 9 samples which, they acknowledge, can be used for such a purpose and it is these that we will focus upon.

We have noted above that the vast majority of Hasanlu IVb material culture published with a *terminus* of 800BC comes from Building II and adjacent buildings on the southern side of the citadel. **However, there are no short lived organic samples from this area of the citadel that could be considered as relevant to the destruction.** In fact, all the cereal seeds and grapes that might conceivably be used to date the Hasanlu IVb destruction are from Burnt Building III — an unconnected building in the north of the citadel. There are no construction dates published for this building, therefore it is impossible — on the basis of the radiocarbon data — to link the chronology with that of the other columned buildings. Furthermore to our knowledge there was no stratigraphic link between the destruction of Building III and the destruction of the main group of columned halls.

On the basis of these factors alone it would be questionable to use the Building III samples to date an event most obviously attested on the either side of the citadel. However, there are other factors that cast serious doubt on whether the short lived samples from Building III bear *any* relevance to the destruction of Hasanlu IVb. Young (1966: 59) argues that Building III was a domestic residence; Piller (2004: 59) writes of bronze working while Dyson (1989: 111) notes the presence of a kitchen and storeroom (Dyson 1989: 111). At least two of these functions, would involve activities that were likely to have resulted in seeds being carbonized and entering the

⁵ Dyson and Muscarella (1989:9) state that “Thirty out of thirty-one dates run for period IVB have ranges that precede 800B.C.”. In their Table 1 only 29 dates from period IVB are listed. In Figures 4-9 to which they refer only 29 dates are also listed.

archaeological record. This is explicitly noted in the original *Radiocarbon* reports (Stuckenrath 1966: 348-360) for the Building III samples: P860 is noted as coming from south of an oven while P863 is said to be near a grinding stone. These are two locales from which cereals as a matter of course would have entered the archaeological record, thus negating the argument that such samples are related to the destruction of the building.

Against this one must admit that the presence of dried grapes (P 970) would be considered by most archaeologists as relevant to an event like a destruction since they are unlikely to have existed in the archaeological record for any amount of time. Here, however, we face a fundamental problem: if the grapes are not carbonized -and this seems to be the case since they are differentiated in the original *Radiocarbon* reports charred grapes — then how is it possible to relate them to the fire that destroyed Building III — let alone the fire that destroyed buildings on the other side of the citadel? Put simply: they are not carbonized and cannot therefore be considered as relevant to the destruction of Building III.

All of these considerations render any attempt to date the main citadel Hasanlu IVb buildings on the basis of the Building III dates as fundamentally flawed. Let us assume, however, that there may be some unpublished aspect of the stratigraphy of the site that would allow us to negate these objections. Let us move forward then and analyse the Building III dates. In doing so we will only quote the 2-sigma probability range for each sample. The rationale for this is that the 1-sigma range quoted by Dyson and Muscarella only encloses 68.3% of the sample's range thus there is a 1-in-3 likelihood of the true-date of the sample not being reported. The 2-sigma range, which encompasses 95.4% of the calibrated sample, has only a 1-in-20 likelihood of not reporting the true-date. In a discussion such as this, it is, therefore, necessary to quote the 2 sigma range date. All the dates are calibrated with INTCAL04 the latest internationally agreed atmospheric dataset (Reimer et al. 2004).

Even if we accept a relationship between these samples, the destruction of Building III and the destruction of the buildings on the southern side of the citadel, it will be clear to the reader that the samples do not permit the conclusion that this event happened before 800 BC⁶ (Table 1). Half of these

⁶ Ideally we could combine these dates together — that would serve to reduce the error and make for a tighter range for both clusters. While this would be justified statistically, it is not justified archaeologically; ie. we have no *a priori* way of knowing that these diverse samples might result from a single anthropogenic event such as a grape or cereal harvest.

Table 1. Hasanlu IVb short-lived samples. Calibrated with INTCAL 04.

Sample Code	14C Age	2 sigma probability method	Relative contribution to probabilities
P576	2664±54	969-962BC	.004
		931-766BC	.994
		677-675BC	.000
P860	2718±55	995-988BC	.010
		980-798BC	.989
P861	2627±53	910-748BC	.893
		687-666BC	.042
		643-590BC	.050
		579-560BC	.012
P863	2604±55	898-731BC	.713
		691-660BC	.091
		651-544BC	.195
P906	2648±54	967-965BC	.001
		929-754BC	.976
		685-668BC	.016
		610-598BC	.006
P907	2699±53	974-955BC	.030
		942-792BC	.969
P577	2767±54	1041-811BC	1.000
P865	2529±53	803-505BC	.969
		491-490BC	.001
		462-450BC	.009
		440-418BC	.020
P905	2700±54	975-953BC	.035
		945-792BC	.964

samples have probabilities that extend into the eighth century BC. To put it another way: the true-date of these samples could be later than 800 BC supporting a conclusion that the destruction took place sometime in that timeframe.

In a unique and even more important position is P865. This sample was originally published as ‘Charred wheat from floor 3 of citadel. Period IVB.’ (Stuckenrath et al. 1966: 350). As charred wheat it might have some relevance for dating the destruction level. The calibrated range of this sample practically excludes a date of 800BC for the final destruction of Hasanlu

IVB. In their rebuttal of Mevedskaya, Dyson and Muscarella list this sample with the Hasanlu IIIB dates but they label it as ‘IV grain’ (Dyson & Muscarella 1989: 5). It is difficult to understand what this means. If it stratigraphically belongs to IVb, then it belongs to IVb — it cannot be placed into a later period on the basis of its age. Unless detailed evidence is available — and it may exist but not be published — that convincingly overturns this attribution then the sample must be considered as relevant to Hasanlu IVb as originally published. As noted, the sample practically excludes the possibility that the site was destroyed before 800 BC.

The carbon-14 samples from Hasanlu Burnt Building III do not, therefore, reinforce, the chronology suggested by Dyson and Muscarella nor do they rule out a destruction at some point in the eighth century BC. We would summarize the reasons for this conclusion as follows:

- (1) Only Building III has provided samples that might be relevant to the destruction; this building is located at some distance from the main group of buildings and there is no published evidence of it being stratigraphically linked to the other citadel buildings that have provided the bulk of the Hasanlu IVb material;
- (2) the function of Building III casts doubt on the relationship between the charred grain samples and the destruction of the building;
- (3) the carbon-14 dates do not, in any case, reinforce an 800 BC date for a radiocarbon event in this building or anywhere in the citadel; and
- (4) a sample initially published as coming from Hasanlu IVb almost excludes the possibility of this level coming to an end at 800 BC. The stratigraphic position of this sample has not been convincingly reassigned in any publication.

Stratigraphic Implications

The Hasanlu IVb destruction must have taken place before the Hasanlu IVa occupation of the main citadel and obviously before the Hasanlu IIIB fortification system, with its clear Urartian associations, was constructed. As few objects from Hasanlu IVa have been published it is difficult to assess when this period began. Once again, we are reliant on carbon-14 data. Three samples are reported from Hasanlu IVa. In examining these dates Dyson and Muscarella conclude ‘The dates from Hasanlu IVa contexts consistently indicate a range in the earliest eighth century, preceding the main cluster of

IIIB dates and following the end of the IVB dates' (Dyson & Muscarella 1989:8). By stating that these dates begin in the early eighth century and follow the IVb dates the results are, therefore, used by Dyson and Muscarella to reinforce the conclusion that Hasanlu IVb ends around 800BC. The re-calibrated 2-sigma carbon-14 dates from Period IVa do not support this conclusion (Table 2). Firstly, as these samples are all run on wood charcoal — not seeds — and as Hasanlu IVA is a squatter occupation on top of destroyed buildings it is very likely that this wood was re-used from the Hasanlu IVb buildings. Even if we disregard this caveat, the calibrated ranges of the samples do not permit one to conclude that Hasanlu IVa started around 800BC. In fact, the probability ranges would only allow one to conclude that Hasanlu IVa occurred sometime in the 8th century BC — certainly not, therefore, reinforcing an 800BC destruction for Hasanlu IVB.

Table 2. Hasanlu IVa carbon-14 samples.

Sample Code	14C Age	2 sigma probability method	Relative contribution to probabilities
P2159	2630±60	920-741BC	.85
		689-663BC	.05
		647-549BC	.10
P2380	2540±50	808-510BC	.99
		435-427BC	.01
P2383	2600±50	894-872BC	.02
		848-732BC	.70
		691-661BC	.09
		650-544BC	.19

When and by whom was Hasanlu IVB destroyed?

Short of direct inscriptional evidence from the site, it is impossible for archaeology to answer this question. The carbon-14 data from Building III, if it is related to the destruction manifested on the southern side of the citadel — and there is no published evidence to support such an assertion —, might conceivably be used to address the 'when' aspect of this question. The most that one could say is that Hasanlu IVb was likely destroyed sometime after 800BC. The conclusion that this occurred in the first half

of the eighth century would be supported by the probability distributions of the carbon-14 dates. Ultimately though, it must be concluded that the carbon-14 samples collected from Hasanlu are not optimal for addressing this question. Given new developments in radiocarbon dating that were not available when the site was excavated, it is possible that this issue could be redressed now. The most productive avenue would be dating collagen from the skeletons of those who perished in the IVb destruction since there is no question of their chronological relationship to the event.

The ‘who’ aspect of the question is unanswerable. Of more import for our understanding of how the Urartian empire worked, however, is the realization that the citadel at Hasanlu IVb likely continued in existence past the time when the Urartians controlled the Solduz Valley. It itself, this should prompt a re-assessment of how scholars have approached the archaeological correlates of the rapid Urartian expansion that characterises the period from 850 to 650 BC. Such a task lies outside, however, the scope of this paper.

Finally, as noted above, the only challenge issued to the dating of Hasanlu was that of Medvedskaya who noted that many of the Hasanlu IVb artifacts have eighth century BC parallels. The data presented in this paper clarifies how such parallels could have existed and throws into question the broader reconstruction of the Iranian Iron Age sequence. Unless new data is forthcoming from Hasanlu IVb that re-affirms an 800BC date the entire sequence of the Iranian Iron Age and floating sites such as Sialk will need to be re-assessed. In doing so, I suspect the regional character of the Iranian Iron Age will come to the fore and the pitfalls of using the Hasanlu stratigraphic sequence to order the entire west Iranian Iron Age will be exposed.

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THE POTTERY FROM THE MANNEAN SITE OF QALAICHI, BUKAN (NW-IRAN)*

BY

Kazem MOLLAZADEH

(Bu Ali Sina University Hamadan, Iran)

Abstract: Mannea is the most important state in the first millennium B.C that ruled a vast part of northwestern Iran for several centuries. The ancient site of Qalaichi near Bukan, is one of the most important sites of Mannea and dateable to around 800-600 B.C. (Iron Age III). The high quality pottery assemblage of Qalaichi is of prime importance and can be classified into fine, common and coarse wares. It contains also a few painted and glazed sherds comparable to material from Ziwiye and Zendan-i Soleyman.

Key words: Iran, archaeology, Mannea, Qalaichi, pottery, Iron Age III

The ancient site of Qalaichi

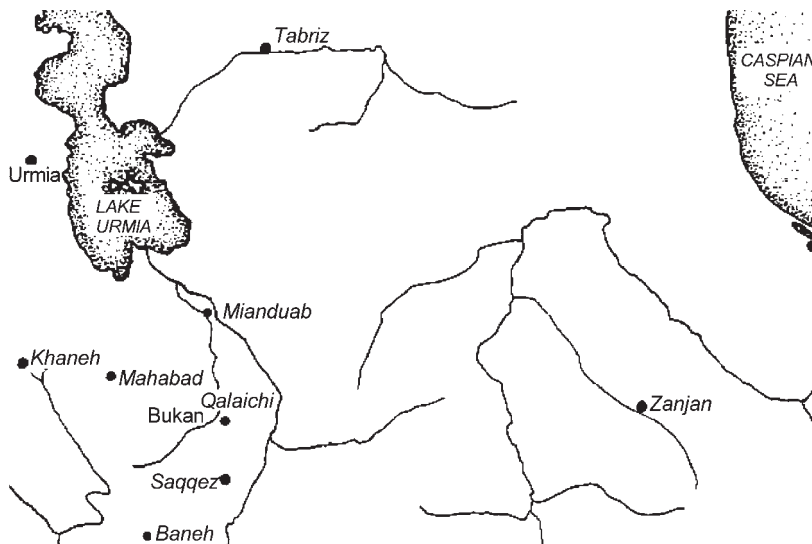


Fig. 1. Location of Qalaichi.

* All data and information in this article have been provided through a season of intensive fieldwork at Qalaichi and two seasons of survey in the Southern Urmia Basin.

Qalaichi is located eighth kilometers northeast of Bukan city and next to Qalaichi village. The excavated site of Qalaichi includes in its cultural sequence a Mannean settlement dateable to around 800-600 B.C., the Iron Age III. During 1984-85 illegal, clandestine excavations have seriously damaged the site. In 1985, in order to save and protect the remaining, untouched parts of the site the "Iranian Cultural Heritage Organization" (=ICHO) launched an excavation project directed by Isma'il Yaghmai. In addition to some architectural remains, the site produced a stele with an Aramaic inscription and a number of glazed bricks. Unfortunately, the excavated material remains unpublished.

Based on the transcription and translation of the inscription on Qalaichi stele (Lemaire 1998: 15-30; Eph'al 1999: 116-121; Sokoloff 1999; Fales 2003: 131-148) and more specifically the phrase of "Haldi in Za'tar" and the identification of Za'tar as Izirtu (the Mannean chief city), it is considered highly probable that Qalaichi is the same as Izirtu/Zirtu which has frequently been referred to in Assyrian inscriptions. In spite of the fact that the site has been plundered, the high quality of the discovered material indicates the importance of the city and supports the above mentioned theory. On the other hand, historical and archaeological data agree with a localization of Izirtu/Zirtu somewhere in this region. Considering the structural characteristics of the site (e.g. the lack of fortifications and natural barriers, the rather small size of the site etc.) however, the question of identification of Za'tar with Izirtu/Zirtu and considering it as the chief city of Mannans is still in suspension and will eventually only be solved with further excavations.

After a rather long cease, Qalaichi excavations resumed in 1999/1378 under the directorship of Bahman Kargar, scientific staff of the "Western Azerbaijan Cultural Heritage and Tourism Organization". Except for one article (Kargar 2004: 229-245) the excavated material is still waiting publication.

As a result of this excavation a rather large architectural complex has been exposed (Kargar 2004). The building consisted of an entrance gate, a stone-paved courtyard, a columned hall with a number of rooms on one side and benches down the length of the hall. The structures are made of large mud-bricks set on a stone foundation, a technique similar to Ziwiye. The foundations are made of small and medium size stones and clay mortar. The non-geometrical plan of the columned hall covers an area of 35x19 meters. The flat ceiling probably rested on four columns. In the middle of one of the side rooms of the hall (northern side) there was a platform measuring 2 by

2 meters. The platform has a stone foundation, similar to the wall foundations and was apparently lined with several rows of mud-brick.

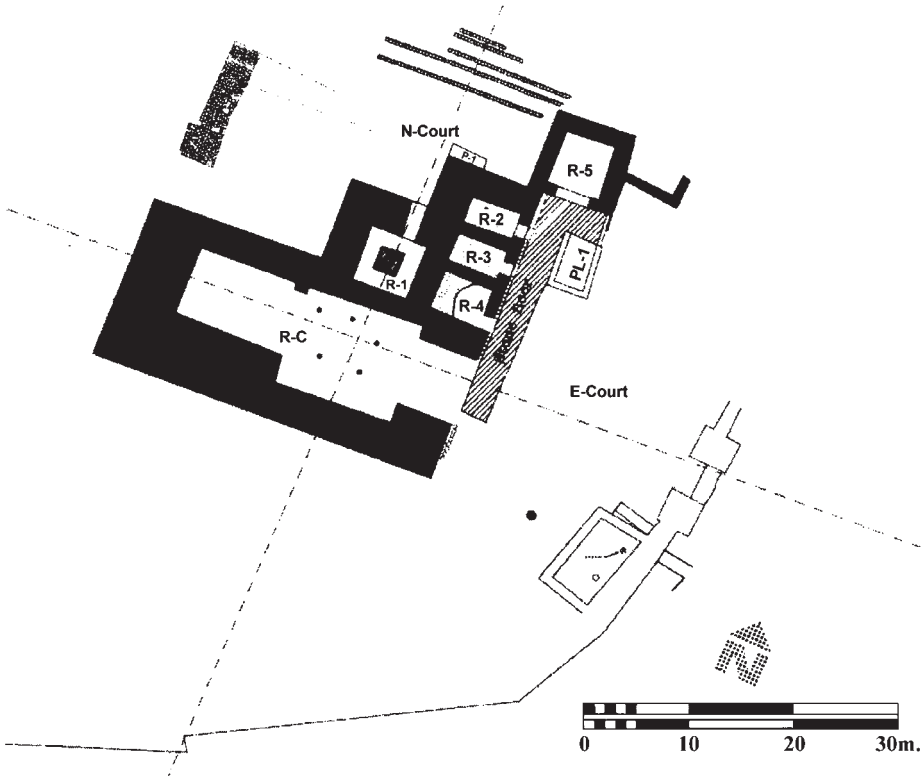


Fig. 2. Qalaichi, plan of the architectural remains (after Kargar 2004: 238).

The most important and characteristic element of Qalaichi architecture is its unique glazed bricks with varying forms, dimensions and decorations (Kargar 2004; Mousavi 1994; Niakan 1999: 162-173). These glazed bricks are paralleled in Assyria at Nimrud (Curtis 2003: pl. 6). The large quantity of glazed bricks, their large size and their weight indicate a local production in a workshop around Qalaichi. Various designs include geometric patterns, animal and human figures, mythical scenes and other decorations.

Analysis of Qalaichi Pottery

In view of the manufacturing quality, the variation in forms and rim profiles as well as their contemporaneity, the ceramic complex of Qalaichi is of

prime importance. Unfortunately, as a result of uncontrolled and destructive diggings of plunderers the pottery assemblage consists only of potsherds. No complete vessels were recovered. Therefore, an accurate reconstruction of many vessels is impossible.

During the season of 2003/1382, under the auspices of Mr. Bahman Kargar, director of the Qalaichi excavations and with the aim of a typological analysis of the pottery an examination and categorization of the ceramic finds of the first three seasons of excavations (2001-03/1380-82) was started. The assemblage consisted of a total of 3175 sherds including 985 fine ware (31.02 %), 1586 common ware (49.95 %) and 604 examples (19.02 %) of coarse ware sherds. There are also 8 painted (0.25 %) and 8 glazed fragments. Different factors were considered to categorize the Qalaichi pottery among which one can point to category, quality, color, slip/glaze and paint.

Based on these factors, the pottery of Qalaichi can be classified into three general categories: Fine Ware, Common Ware and Coarse Ware, and within each category several subgroups.

1. Fine ware

- 1-1. Fine Ware with a thick light cream slip
- 1-2. Fine Buff Ware (Pl. 2, 8)
- 1-3. Fine Reddish Buff Ware (Pl. 3, 9-10)
- 1-4. Fine Grey Ware
- 1-5. Fine Painted Ware
- 1-6. Fine smoke blackened or Kitchen Ware

2. Common ware

- 2-1. Common Ware with a thick light cream slip
- 2-2. Common Buff Ware
- 2-3. Common Reddish Buff Ware
- 2-4. Common Grey Ware
- 2-5. Common smoke blackened and Kitchen Ware
- 2-6. Common Painted Ware
- 2-7. Common glazed ware

3. Coarse Ware

- 3-1. Coarse Ware with light cream slip
- 3-2. Coarse Buff and Reddish Buff Ware

3-3. Coarse Grey Ware

3-4. Coarse smoke blackened or Kitchen Ware

1. Fine Ware (Pl. 1-9)

Fine Ware comprises more than 31 percent of the pottery and in comparison to other contemporary sites such as Ziwiye this is a rather high percentage. This obviously indicates the importance of the site and its specific function. In this category the quality of paste, firing degree, slip and form is very high, so that sometimes the thickness of the sherds does not exceed 1 mm. with a well-levigated paste and bright and very smooth surface. Perhaps one can claim that at least at the time of flourishing, Qalaichi has produced elaborate pottery forms.

All sherds of this category are wheel-made and have very fine sand temper, sometimes invisible with the naked eye. Fine Ware is generally of good and compact fabric and made of washed clay. Given the small size of all discovered pieces, however, one can hardly reconstruct predominant forms. Yet the present amount is enough to assume that the major Fine Ware forms were tulip bowls and plates.

1-1. Fine Ware with a thick light cream slip (Pl. 1)

The fine ware with thick and light cream slip comprises approximately 21.92 percent (out of 985 sherds) of Qalaichi Fine Ware. A characteristic feature of this category is the fact that they have a thick, light cream slip of high quality, which sometimes inclines to white or pink. In some instances, this slip covers both sides of the vessel. During firing process, some vessels take a beautiful cream or pink color. There is a variety of rim profiles (Pl. 1, 7) but the most common ones are plain, high flaring rims with rolled over ends and profiled rims belonging to tulip bowls and small fine jars. In this category the bases are always flat, but rounded bases with a small circular depression in the center are also present (Pl. 1). A number of vessels of this category have a pouring spout (Pl. 1, 7). These spouts belong to a long ceramic tradition to be found in various regions, especially at Ziwiye and Zendan-i Soleyman. An example of plain and short spouts has a strainer at the rear part (Pl. 1, 7 n° 22). The handles in this type of vessels, especially those with horn-like projections (Pl. 7 n° 23) are paralleled at Ziwiye and Hasanlu III-IV.

1-2. Fine Buff Ware (Pl. 2, 8)

Slip and paste color of this category of vessels is changing from light buff to brownish-buff and comprises 24.87 percent of Fine Ware of the site. Manufacturing quality of this category is comparable to the first group. Like in the former category, bowls with plain, high flaring rims are the most common form. The variety of rims and bases is striking. Small flat bases, rounded bases with a small depression in the center and elliptical or oval bases are present. Some sherds of this type have also incised decoration of crosshatched triangles on the shoulders (Pl. 6). Designs of these wares are closely similar to those on the pottery of Ziwiye, Zendan and other sites of Saqqez and Divandareh regions. Within this category there are a few painted sherds (Pl. 5).

1-3. Fine Reddish Buff Ware (Pl. 3-5, 6, 9)

This category comprises the majority of the assemblage and amounts to approximately 42.03 percent of the Fine Ware of Qalaichi. Manufacturing quality of this category is like the former ones and their color spectrum is changing from pinkish-buff to reddish-buff and red-brown. They have always a thick elaborately finished slip. Pottery forms are largely comparable with the previous categories. They are mainly bowls and small fine jars. There are small flat bases and rounded ones with a small central depression (Pl. 9 n° 3, 32, 33). The latter ones have parallels in Zendan, Ziwiye and Hasanlu. For Hasanlu an Instrumental Neutron Activation Analysis have shown that the “classic triangle” ware was imported there (Dyson 1999: 120).

Vessels of this category have always been decorated with painted, incised and impressed patterns. Among the most prominent finds of this group one can point to fragments of a jar (Pl. 5) with two vertical loop handles on the neck and a basket handle. This handle is hexagonal in section and every other side has been painted brown. On the shoulder of this vessel, incised triangles featured in a decorative band. Similar basket shaped handles, with a twisted triangular section (Pl. 5), were also discovered at Qalaichi. Forms and decorations of this category are comparable with Ziwiye, Hasanlu and Zendan ceramics.

1-4. Fine Grey Ware

This category comprises only around 5.98 percent of the Fine Ware and is not comparable with other categories qualitatively. Most sherds belong to

goblets, phialae and small bowls. In this group rim forms have slight variation and the surface has always been decorated with shallow grooves or incised lines.

1-5. Fine Painted Ware (Pl. 5)

The Qalaichi excavation yielded three painted fine body sherds and two painted basket handle fragments referred to above (Pl. 5). Painted sherds are either monochrome or bichrome with a color spectrum ranging from light to dark brown sometimes inclining to black. The sherds are not large enough to identify the original painted motif, but in one instance (Pl. 5) the motif can be identified as a lotus similar to the flower on the shoulders of a glazed jar of Ziwiye.

1-6. Fine smoke blackened or Kitchen Ware

This category comprises 4.77 percent of Fine Ware of Qalaichi and consisted of those examples, which due to insufficient degree of fire in the kiln turn to grey colored vessels as well as cooking pots. Some pieces are very fine, but in general their quality is lower than the former categories.

2. Common Ware

This category of pottery comprises about 50 percent of the total assemblage (out of 3175 examples) and generally is of good quality with a high variety of forms. Qalaichi Common Ware is wheel-made and sand or grit tempered.

2-1. Common Ware with a thick light cream slip

This sub-category covered with a thick light cream slip comprises 7.5 percent of the Common Ware (1586 examples). Sometimes they are of very good quality and well fired. The paste is reddish-buff and only the exterior surface is covered with slip. All bases are flat.

2-2. Common Buff Ware

In this group, except for the buff slip, the characteristic features are the same as the former sub-category. Decorative elements are rare and include plain grooves and ribs on the shoulder of the vessels.

2-3. Common Reddish Buff Ware (Pl. 10)

This sub-category comprises 59.33 percent of the Common Ware and color of their exterior slip is ranging from pinkish to reddish-buff. Bowls and jars are the most common (Pl. 10). The surface of vessels is almost always burnished and polished. Decoration is rarely used and includes painted and incised patterns, and ribbed or incised bands on the body of the vessels. The variety of rim forms is striking. In this type flat bases and various forms of handles have also been used.

2-4. Common Grey Ware

This variety comprises approximately 5 percent of the Common Ware and its color is ranging from light to dark grey. Light grey examples, however, are greater in number. These sherds are well fired and have a smooth and polished surface. In some instances they are decorated with ribbed or incised lines. In this group a number of bands with decorative designs and burnished or polished patterns have also been found. Unfortunately, sherds are not large enough to identify the form of the vessels.

2-5. Common smoke blackened or Kitchen Ware

This group consists of cooking vessels and smoke blackened sherds. Cooking ware is of low quality and is sometimes formed by hand.

2-6. Common Painted Ware (Pl. 5)

A total of 4 sherds of painted Common Ware were found. Geometric pattern and animals are painted in red, brown and black (Pl. 5).

2-7. Common Glazed Ware (Pl. 6)

On the whole, seven sherds of Glazed Ware were found. Glaze of these sherds is yellow, pinkish, orange and bluish-white and is still well preserved (Pl. 6). Similar examples have been found at Ziwiye and Hasanlu.

3. Coarse Ware

Coarse sherds comprise approximately 19 percent of the total complex and mainly consisted of storing jars and cooking wares. These sherds are mainly hand-made and grit tempered.

3-1. *Coarse Ware with light cream slip*

The main characteristic of this sub-category is its slip color which is an imitation from Fine and Common ware. The quality and thickness of these slips, however, are not comparable.

3-2. *Coarse Buff and Reddish Buff Ware (Pl. 11)*

This variety comprises 64 percent of the Coarse Ware (604 examples) and mostly has plain rim forms. Flat pottery lids and pedestal bases are among the prominent pieces of this category.

3-3. *Coarse Grey Ware*

This sort of vessel is hand-made and has plain forms and rims with penannular shape handles.

3-4. *Coarse Smoke Blackened or Kitchen ware (Pl. 12)*

This sub-category is rarely found and has grey to black color.

Comparison and Chronology of Qalaichi Pottery

On the whole, the pottery assemblage of Qalaichi represents a single cultural period and belongs to Iron Age III. While showing different reconstructions, the architectural remains belong to one cultural occupation. Since before commencing scientific excavation the site has been highly disturbed by plunderers, stratigraphy is not so useful anymore to present a more precise chronology for the pottery. Accordingly, I would like to suggest that the total complex should be studied as a single historical period.

The Qalaichi inscription with reference to the name of “Za’tar” (possibly the same as Zirtu or Izirtu) (Lemaire 1998: 15-30; Eph’al 1999: 116-121) as well as the architectural remains in all likelihood allow us to identify Qalaichi as ancient Izirtu, the chief city of the Manneans (Kargar 2004: 229-245). However, this remains to be proven.

According to the Assyrian historical texts (Luckenbill 1927), Izirtu was the capital of the Manneans at least from 828 B.C. onwards until the final years of seventh century B.C. From 834 B.C. the historical sources refer to the Mannean state. Accordingly, Qalaichi can be dated

sometime between the middle of the ninth century B.C. and the final years of seventh century B.C.

The pottery from Qalaichi is very similar to pottery from Hasanlu IIIB (Dyson 1999a), Ziwiye (Motamedi 1997/1376; Young 1965) and Zendan-i Soleyman (Boehmer 1988) which are all dated to Iron Age III (800-550 B.C.). Of course, it seems that Ziwiye was still occupied for a while after the fall of Mannea. Pottery complexes of these four sites are very similar and undoubtedly contemporary. This similarity is obvious in their color, groups, percent of different types and sub-types, decorations, painted and glazed wares, forms, manufacturing quality and finishing. A glance over the profiles of the potsherds evidently shows this similarity. Based on this evidence, I propose a date between 8th-7th centuries B.C. for the Qalaichi complex. Our typological analysis shows that Qalaichi was probably almost contemporary with Zendan or a bit later and abandoned around 600 B.C. and before the end of Hasanlu III period and Ziwiye. Abandonment of occupation at Qalaichi was possibly coincidental with the fall of political life of Mannea in the final years of the seventh century B.C. The pottery assemblage of Qalaichi represents one occupational level of 8th-7th centuries B.C., and coincides with the Mannean period. This complex has strong links with the materials from Ziwiye, Zendan-i Soleyman, a part of Hasanlu III pottery assemblage, Kul Tarikah cemetery (Rezvani 2004; Rezvani & Roustaei 2007), and assemblages from Bukan and Saqqez surveys (Swiny 1973). In general, this complex is part of the Iron Age III buff ware tradition of west and northwestern Iran.

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Pl. 1. Qalaichi, Fine Ware with a thick light cream slip.



Pl. 2. Qalaichi, Fine Buff Ware.



Pl. 3. Qalaichi, Fine Reddish Buff Ware.



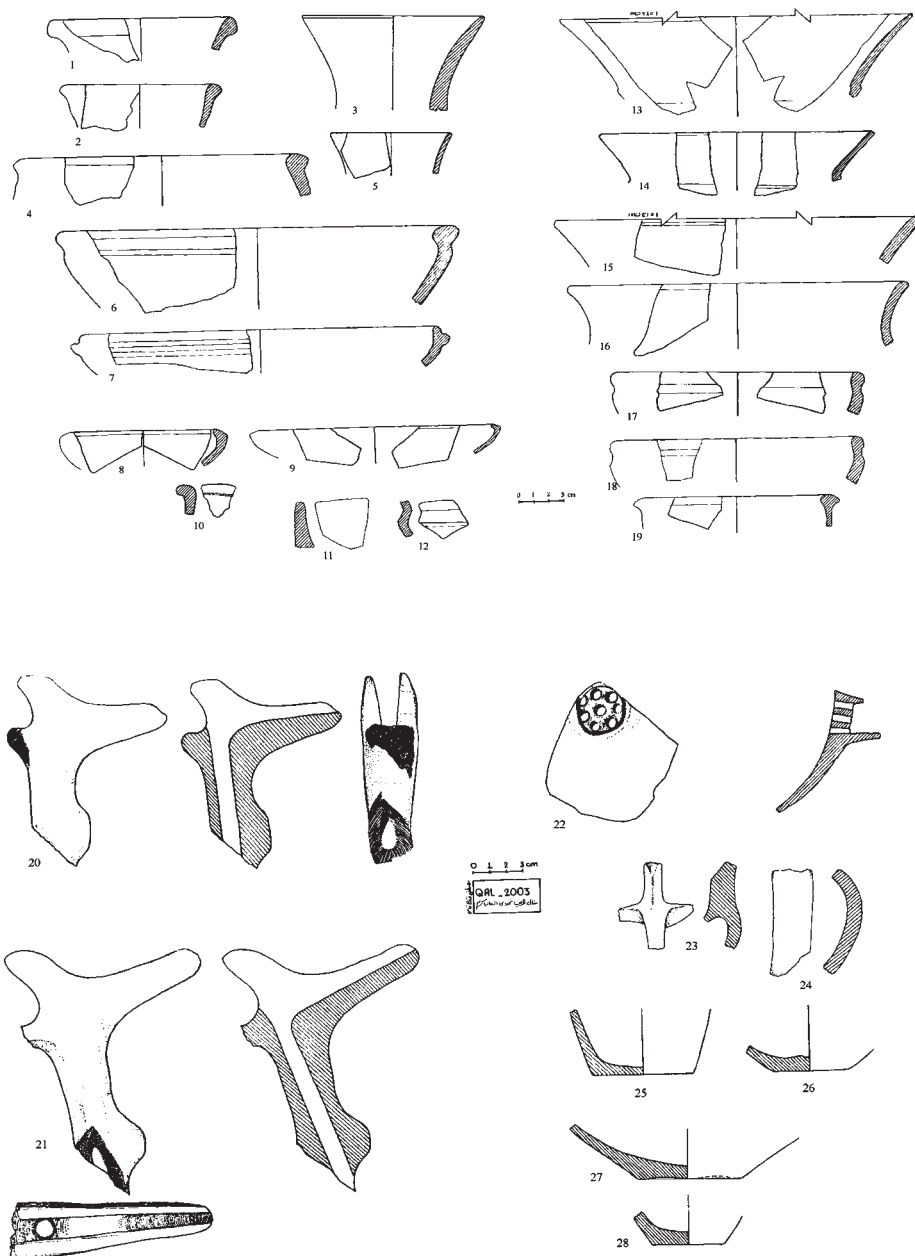
Pl. 4. Qalaichi, Different forms of Fine Ware.



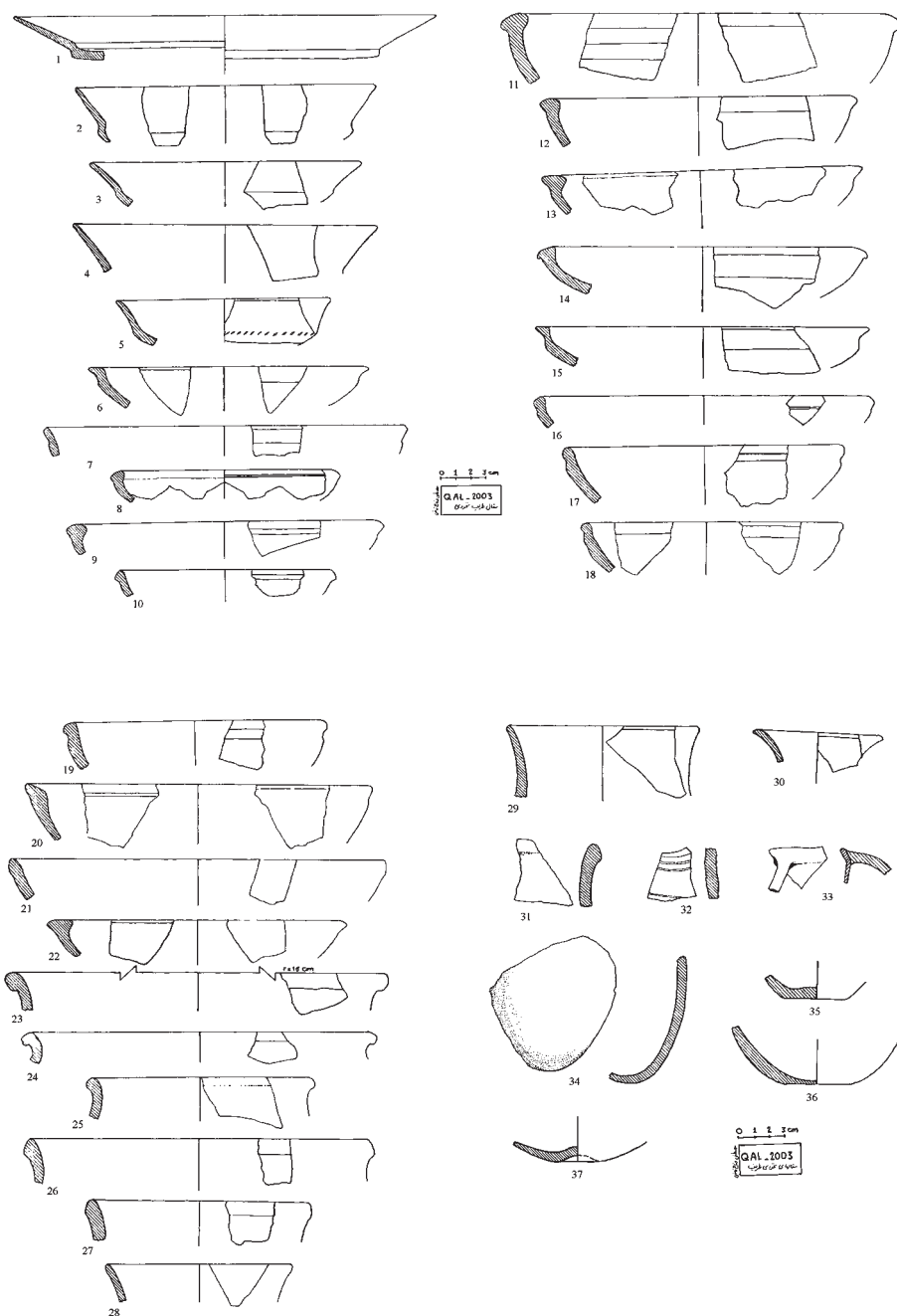
Pl. 5. Qalaichi, Painted, Fine and Common Wares.



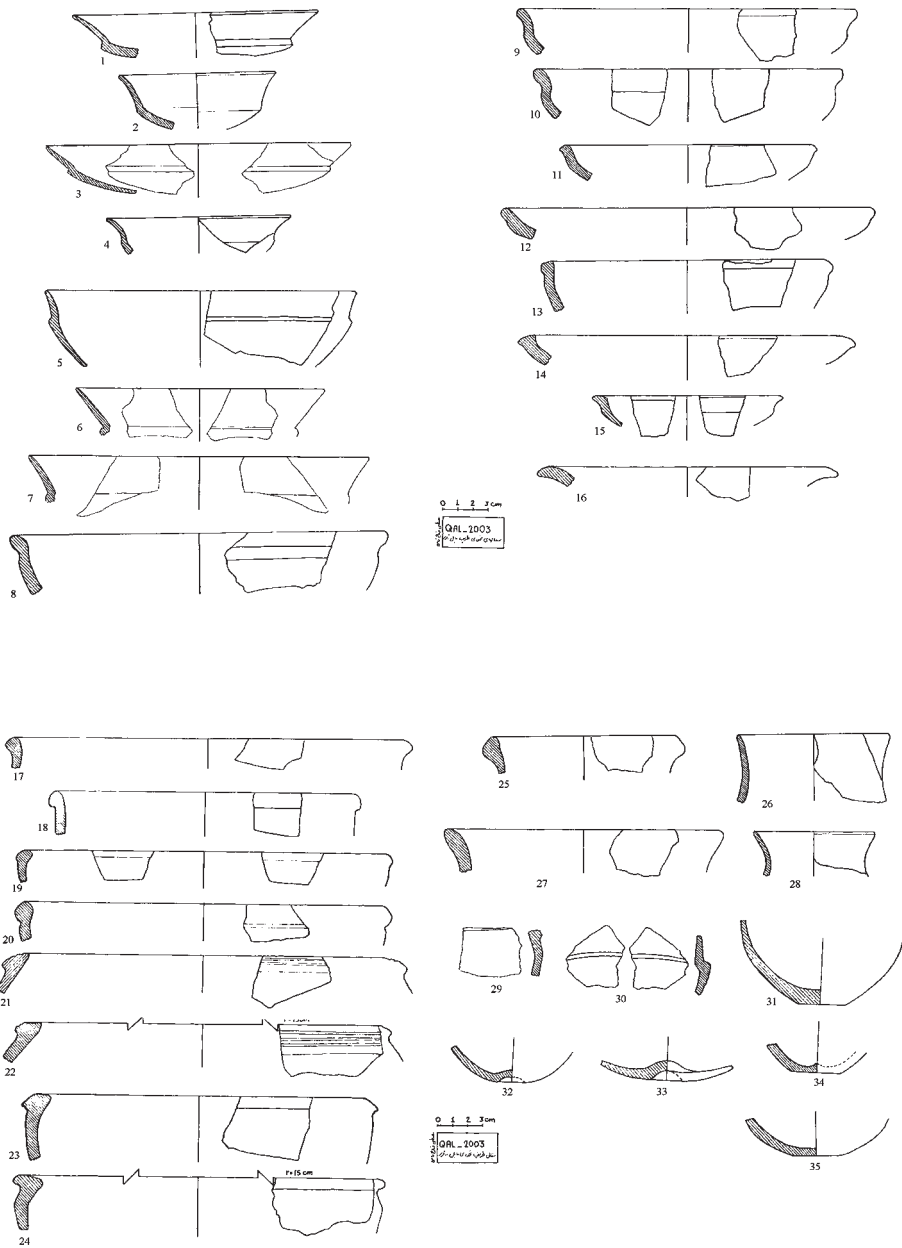
Pl. 6. Qalaichi, Fine Ware with incised pattern (top) and Glazed Common Ware.



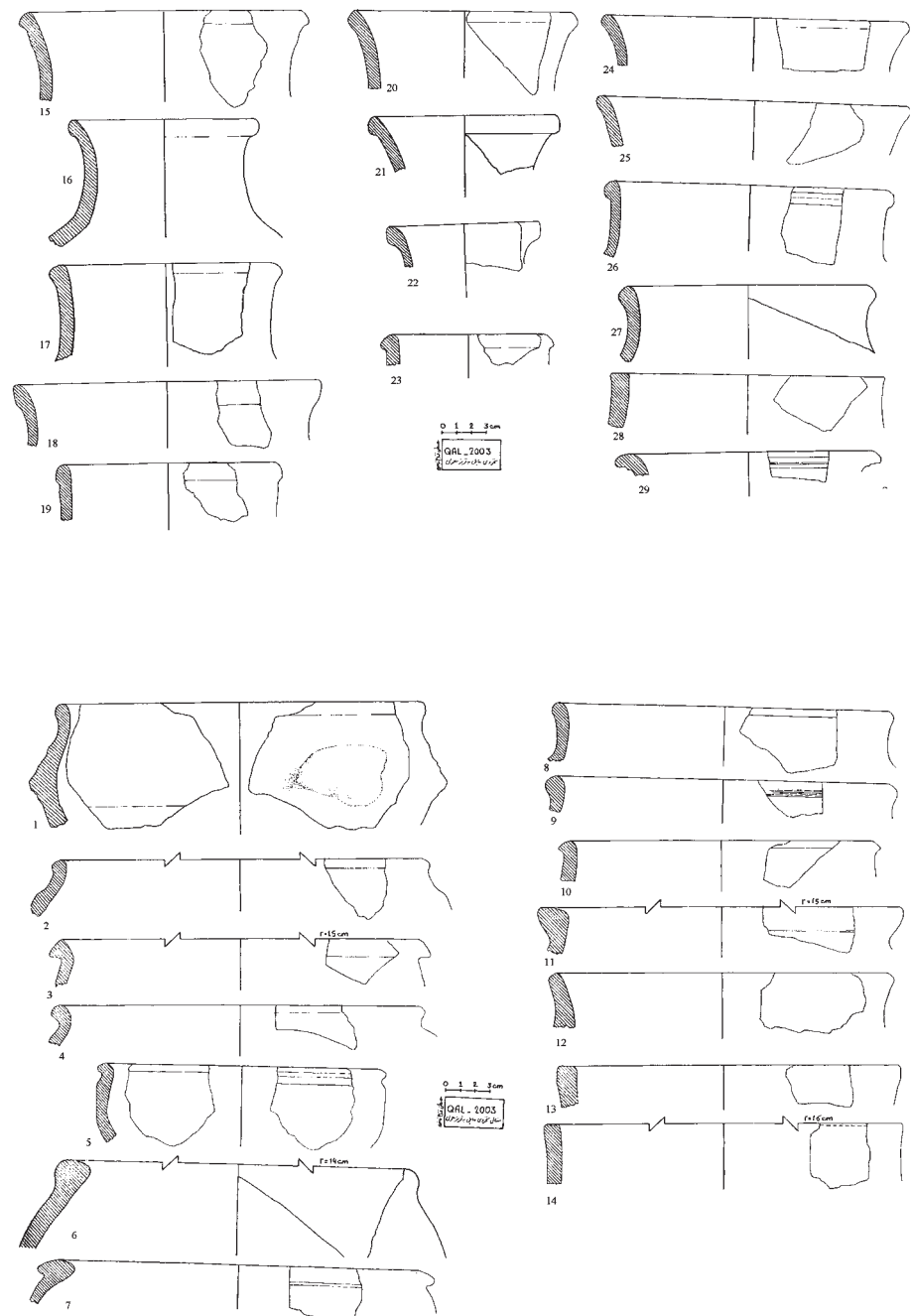
Pl. 7. Qalaichi, Fine Buff Ware with a thick cream slip.



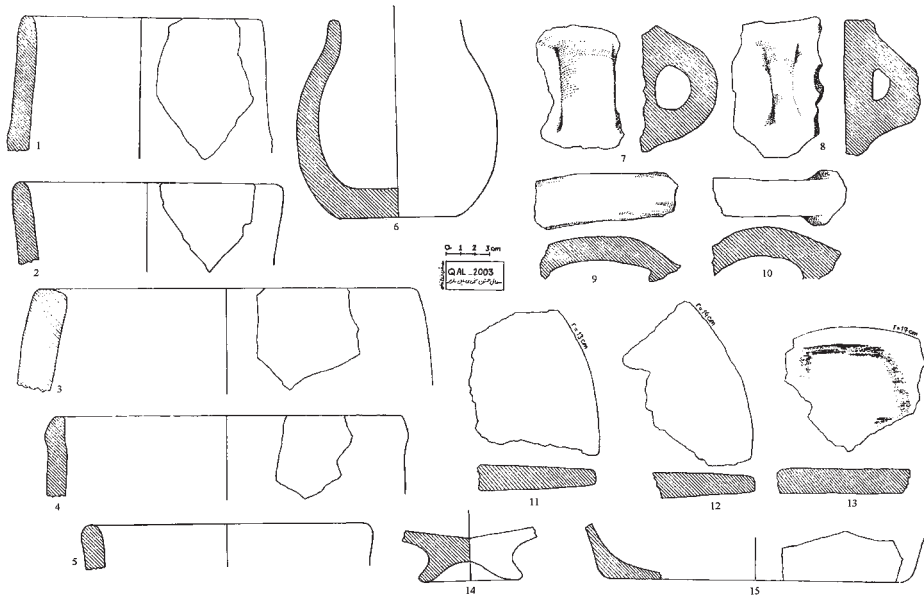
Pl. 8. Qalaichi, Fine Buff Ware.



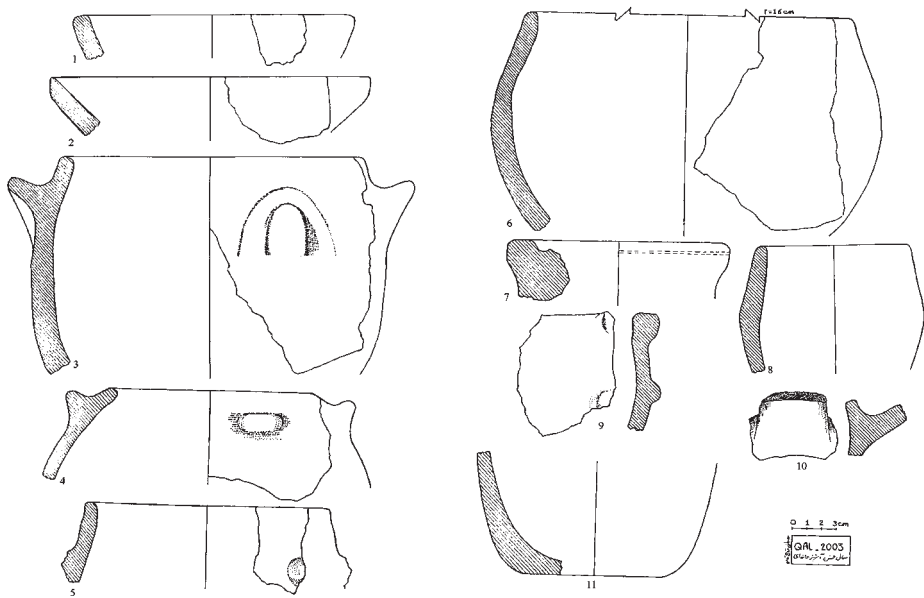
Pl. 9. Qalaichi, Fine Reddish Buff Ware.



Pl. 10. Qalaichi, Common Reddish Buff Ware.



Pl. 11. Qalaichi, Coarse Buff Ware.



Pl. 12. Qalaichi, Coarse Smoke Blackened or Kitchen Ware.

**‘GIVE TO DRINK, O CUP-BEARER!’
THE ARJAN BEAKER IN THE CONTEXT OF
LION-HEADED DRINKING VESSELS
IN THE ANCIENT NEAR EAST**

BY

Javier ÁLVAREZ-MON
(University of Sydney, Australia)

“Men of the ‘second house’ will stand holding torches between the (individual) tables of the king’s sons and the emirs; and when the meal has been generously served, incense in good quantity will be burnt around the tables of the king’s sons and of the emirs, the large drinking-cups will be set down, and the ša pān ekalli will take his stand, saying, ‘give to drink, O cup-bearer!’ ”

(J. V. Kinnier Wilson, *The Nimrud Wine List*, 1972: 43).

Abstract: This article introduces the reader to an outstanding object found in 1982 inside a burial known as the Arjan tomb, in eastern Khuzestan (Iran). The bronze beaker from Arjan is characterized by an engraved upper register bearing the representation of six identical running ostriches and a lower bulbous convex section worked at repoussé into the shape of four overlapping lion heads converging on a central rosette. In addition to a description and complementary discussion of the beaker’s formal properties, this article includes an examination and hypothetical reconstruction of the likely cultural setting associated with these exceptional artifacts. Most determinant for this interpretation is the evidence provided by the presence of lion-headed beakers associated with banquet ceremonies exhibited in stone reliefs at the palace of palace of Sargon II (722-705) at Dûr-Sharrukîn (Khorsabad), which include gatherings of members of the Assyrian ruling elite raising lion-headed beakers to face level.

Keywords: Arjan, lion-headed beaker, ostriches, Iran, Elam, Khorsabad

Foreword

In 2003 I had the opportunity to access the collection of artifacts found in the Arjan tomb. Without reservation, this intact burial and its associated materials emerge as one of the most exceptional finds in recent Near Eastern archaeological discovery. It is a testament to the resolve of many

individuals that this material is safely preserved in the National Museum of Iran; indeed, the present article would never have existed without their keen involvement and the additional assistance of friends and colleagues¹.

In the following pages I propose to examine one remarkable object deposited in the Arjan tomb. This study of the Arjan beaker is but a short chapter in a much larger work dedicated to this tomb, associated materials, and their resulting impact on the historical and artistic record of the first millennium BC. Hence, it is important to bear in mind that the beaker belongs to a corpus of material artistically related but whose formal characteristics and correspondences will be discussed in this paper only marginally².

The primary goal of the present study, however, is to reach beyond the formal properties of the Arjan beaker and to attempt grasping what may be said to be a reconstruction of its cultural identity. Such an approach seeks to go beyond an understanding of the object of art for its own sake and addresses the larger functional context provided by artistic, textual and archaeological evidence to generate aspects of cultural history. Seeking to go beyond a description of the formal aspects of an object and trying to understand its larger social role within a culture (i.e. who made the object, why, and for whom) entails a critical analysis of traditional Western art historical methods for the examination of non-Western artistic production; including a recognition of the inseparability of the social, economic, religious, and the artistic and their manifested integration into the organic nature of the artifact or, in the words of E. H. Gombrich, the “ecology of art.”

With these wide-ranging thoughts in mind we may proceed to consider the Arjan beaker. At the outset, a brief introduction to the archaeological context of the Arjan tomb is provided; A description and complementary discussion of the beaker’s formal properties as defined by an upper and a lower partition ensues; Lastly, this article comes to an end with an examination and hypothetical reconstruction of the likely cultural setting associated with lion-headed beakers.

¹ In particular, I am most grateful to Mr. Mohammad Reza Kargar, Director of the National Museum of Iran; Ms. Zahra Djafar Mohammadi, Head Curator; Ms. Shahin Atefi, Head Keeper at the Central Treasury Department; and Shahrokh Razmjou, Director of the Center for Achaemenid Studies.

² A full analysis of all the objects and an evaluation of their artistic significance is the main focus of my doctoral dissertation. For an updated list of publications dealing with the Arjan tomb see note 3 below.

§1. Context of the Find

In 1982 a burial was found in the vicinity of an area known as Argūn, the location of the ancient city of Arrajān, an important agricultural and commercial emporium during the Sassanian and Medieval periods. Arrajān lies around 9 km northeast of the city of Behbahān, next to the Marun River, a natural boundary between the present-day provinces of Khuzestan and Fārs. This region stood on ancient crossroads, linking the Iranian highlands, Mesopotamia, and the Persian Gulf (Gaube 1973).

The Arjan tomb included an ensemble of unique masterpieces of superior artistic value and rare craft. A bronze “bath-tub” coffin held the skeletal remains of an adult male lying on his back. Circumstantial evidence suggests he was dressed in a luxurious garment made of cotton and ornamented with gold rosettes and disks. At his left side lay an iron dagger decorated with precious stones and gold filigree. His right hand appeared to have been resting on top of his chest, holding a golden “ring” of extraordinary artistic characteristics. An engraved bronze lid was firmly secured to the coffin by ropes tied to side handles. Outside the coffin were an additional number of exceptional items of ceremonial and functional value³.

Four objects inside the Arjan tomb — a large bronze bowl, a bronze candelabrum, a silver vase, and the golden ring — bear an inscription in Neo-Elamite language reading: “Kiddin-Hutran son of Kurluš.” This inscription has been dated to the end of the Neo-Elamite period (ca. 585–ca 539 BC)⁴. Artistically, the chronology proposed for the bowl and the ring has been placed within the last part of the 7th century BC and the beginning of the 6th century BC. This timeframe closely matches that assigned to the late Neo-Elamite period or Neo-Elamite IIIA (ca. 647–585 BC) which corresponds to the period between the sack of Susa and

³ A summary report of the excavation and finds from the Arjan tomb appeared in Persian in 1982 (Tohidi and Khalilian 1982) and complementary further analysis appeared soon afterwards in English (Alizadeh 1985) with commentary by R.M. Boehmer (1988). For subsequent studies of the Arjan tomb and funerary related goods see Vallat 1984; Alizadeh 1985; Sarraf 1990; Majidzadeh 1990; Stronach 2003, 2004a, 2004b, 2005; Alvarez-Mon 2004, Alvarez-Mon forthcoming a, b and c.

⁴ Following F. Vallat (1996: 393; 2000: 30); Note, however, that late Neo-Elamite chronology remains problematic (Potts 1999: 295–301; Waters 2000; Tavernier 2003; Henkelman 2003: 180–231; for an updated review of the discussion see Henkelman 2006: 5, nt. 9).

trumpeted devastation of western Elam by Assurbanipal⁵ and the earliest date assigned to the Neo-Elamite tablets found at Susa. A comprehensive study of the Arjan tomb and associated materials by this author confirms both the textual and art historical evidence assigned to this material and recommends the dating of most artifacts from the Arjan tomb to the last quarter of the 7th century BC, while the tomb itself and the engraved inscription of Kiddin-Hutran should most probably be dated a generation later.

§2. The Arjan beaker⁶

The beaker was found on the floor of the funerary chamber together with other metal vessels, including a bronze candelabrum, a bronze lamp, bronze chalices, a silver jar, and an extraordinary bronze bowl engraved with a series of concentric narratives. At some point in the long history of the Arjan tomb, water flooded the chamber to a height of 55cm. The beaker remained submerged in water and mud for an uncertain period of time. When the vessel was recovered it was heavily corroded, with accumulated layers of greenish oxidation, having lost a large part of the central rosette at the base of the beaker (Pl. 3). The removal of the contents of the tomb was done in the presence of the authorities from Behbahān; thereafter, all the objects were packed and transferred to the National Museum of Iran, in Tehran, where they are presently housed. The master summary report of the findings was published in Persian by F. Towhidi and A. Khalilian in 1982 with a complementary publication in English by A. Alizadeh (1985). The beaker itself was summarily described by the Iranian scholar M.R. Sarraf (1990). Subsequent cleaning and restoration of the beaker in the National Museum of Iran revealed striking, hitherto unnoticed properties that call for the present, new assessment.

The bronze beaker measures 9.4 cm in diameter (at the mouth) and 13 cm in height. It is characterized by a unique combination of artistic properties,

⁵ Archaeological evidence, however, indicates that the destruction of Susa had no effect on ceramic or artistic sequences (Miroschedji 1978: 225-227; 1981).

⁶ The Greek term *rhyton* is frequently used to identify this type of object. The word *rhyton* is broadly used in the literature to cover any kind of animal-headed drinking vessel. In a narrower sense, however, *rhyton* identifies a wine drinking container with a small hole near the bottom; For the sake of simplicity, all such vessels will be called 'beakers' in the present paper.

namely: an upper frieze or register around the neck of the beaker bearing the incised engraving representation of six identical running ostriches (Pls. 1 & 2b) and a lower bulbous convex section worked at repoussé into the shape of four overlapping lion heads converging on a central rosette (Pl. 2a).

§2.1. *The Upper Section: Ostriches*

The upper section of the beaker exhibits a folded rim at the mouth and an engraved horizontal register depicting six ostriches of identical characteristics evenly distributed along an open field framed on both sides by six parallel lines enclosing a single guilloche band (Pl. 2b). As a whole, the proportions and anatomical details of the ostriche's body are represented with great accuracy. The bird is depicted in the act of running with extended legs composed of muscular thighs and long, solid, bones ending in strong talons counting with three (?) toes; two visible wings in a flapping pose open sideways to form a diagonal line matching that of the extended front leg. The visible part of the wings is composed of three layers of feathers sprouting from a curved shaft attached to the center of the chest and lower belly. A bushy array of feathers represents the rear of the body and a half-drooping tail. The plumage covering the body of the ostrich (including the neck and the thighs) has been distinctively embellished with a combination of short arched and straight incisions. A characteristic elongated and slightly bended backwards neck supports the head which includes a circle to mark the ocular cavity, a v-shaped mark depicting the ear, and a wide open beak.

The depiction of running ostriches with raised wings in a flapping, flight-like, pose follows an artistic convention reaching back to the late second millennium BC⁷. In particular, a study of the depiction of ostriches in Assyrian glyptic art by Dominique Collon reveals that during the 8th and 7th centuries BC there developed a special interest in representing the bird in the context of hunting practices (Collon 1998). Concretely, standard depictions found in Mesopotamian seals favor a four-winged genius or naked (?) individual seizing an ostrich by the neck (Pls. 4e, f & g), and a hunter holding a weapon in one hand and an ostrich egg on the other (Pls.

⁷ Thus D. Collon 1998: 26; Ancient folklore is filled with explanations of the bird's inability to fly. One account tells how the sun scorched the ostrich's pinions so that the pitiful creature plunged to earth, forever roaming restlessly in the desert (Laufer 1926: 15).

4c & d). An eight century BC seal found in the temple of Ninurta at Nimrud, but probably originally from Iran, locates the hunting scene within a mountain landscape (Pl. 4a). Closer to the Elamite homeland, a “Luristan” type bronze vessel is engraved with a comparable iconographic motif, that is: a hunter holding an ostrich’s egg in his hand as he confronts a running ostrich which turns its head back towards its assailant (Pl. 4b). The dating of this beaker has been placed between 1000 BC and the early part of the 8th century BC (Collon 1998: 35). When compared against these earlier illustrations, the running ostrich depicted in the Arjan beaker emerges as a more anatomically and proportionally accurate sample; in fact, its voluminous body and dropping feathered tail, together with a detailed depiction of long legs, toes, and body plumage suggests naturalistic awareness in the hand of an accomplished metal artisan.

A closer stylistic parallel to the ostrich represented in the Arjan beaker can be found on a line-drawing belonging to a Neo-Elamite seal bearing the Elamite inscription *Šutur-huban son of Huban-tašu*. These two individuals are likely to have been contemporaries of Kiddin-Hutran, as all three are separately associated with the late Neo-Elamite tablets from Susa (ca. 585-ca. 539 BC). The seal illustrates a spearman on a leaping horse pursuing a running ostrich (Pl. 4h); in the artistic convention of the period, the ostrich rears back to look at the hunter. The line-drawing of this seal exhibits a running bird characterized by a wide step, sturdy muscular legs, extended wings with a curved shaft, a half-dropping bushy angular tail, long neck and wide open beak. Although the line-drawing suggests a lesser degree of interest in the naturalistic characteristics of this great bird, the individual elements provide good points of comparison with the ostrich represented on the Arjan beaker. These analogies corroborate the onomastic link and advocate for a closely related chronological frame for both, the seal of *Šutur-huban* and the Arjan beaker.

Ostriches (Sum. GA/GÁ.Nu_x(ŠIR).MUŠEN; Akk. *lurmu*) were part of the rich and diverse fauna of the ancient Near East. In addition to being prized for their eggs and feathers⁸, they were also highly valued as elite

⁸ A cup made from an ostrich egg was found in the ‘A’ cemetery at Kish (Laufer 1926: 2). An ostrich egg was found in an Iron Age III context at Chamahzi Mumah, Luristan (Haerinck & Overlaet 1998: 41, fig. 45, pl. 72c); I am indebted to E. Haerinck for this reference and additional insightful comments regarding this article. For vessels made from ostrich eggs see *lurmu* in the CAD, *The Assyrian Dictionary* Vol. 9 (The Oriental Institute: Chicago, 1973), 255. For evidence of ostriches, and ostrich hunting, in ancient Arabia see Potts 2001.

game privileged by nobles and kings⁹. An attempt at reconstructing the history of ostrich hunting practices based on a literal understanding of the illustrations previously examined points to two singular episodes involving a hunter and a horseman¹⁰. One method appears to have required luring the animal out of its nest with an egg (Collon 1998: 38). To press this point even further; such a technique might have been restricted to the incubation season, which tends to last for a period of about 42 days (Bertram 1992: 68). A second approach, however, involved a horseman with a spear running after the bird.

The image represented in the Neo-Elamite cylinder seal of Šutur-huban provides little guidance as to how this practice may actually have taken place. Should we, in actuality, presume that this single horseman chased down the ostrich until he was close enough to unleash the fatal weapon? A comment made by the Greek author Xenophon regarding the hunting activities of a group of Persian (?) soldiers belonging to the army of Cyrus the Younger, sheds some light on this matter, suggesting perhaps that chasing an ostrich on horseback may have not be as simple as the seal of Šutur-huban would like us to believe:

In this [arid] region there was wild game of all kinds — wild asses in greatest abundance, with plenty of ostriches; besides these, there were bustards and antelope... No one was lucky enough to capture an ostrich. Some of the troopers did give chase, but it had soon to be abandoned; for the bird, in its effort to escape, speedily put a long interval between itself and its pursuers; plying its legs at full speed, and using its wings the while like a sail. (Anabasis Book I, chapter V)

Other than the lackluster performance of the Cyrus' horseman, it was the proverbial speed of the ostriches — which can reach more than 60 miles

⁹ The Assyrian king Adad-Ninnari II mentions the killing of eight wild bulls and eight ostriches, along with the capture of eight live ostriches. Assurnasirpal II boasts to have captured 50 wild bulls and 140 ostriches alive (see Lion 1992: 202).

¹⁰ In both cases, though, the ostrich's wings are depicted in full extended mode, a response seemingly occurring in three circumstances: during the dance of the mating season, when the ostrich rouses itself to take off, and in the act of running. According to Laufer (1926: 21), "the wings serve the ostrich, while running as ploy and rudder, and it has been observed that with favorable wind they are even used as sails." In addition, the birds also perform dances at dawn, "run around in circle, flap their wings, and endeavor to rise in the air," (Goldie 1968: 17).

per hour — that attracted the attention of Xenophon. At the same time, this report reveals that Cyrus' horsemen were unaware of a significant element later associated with ostrich behavior, namely: that the bird is compelled to flee danger by running in a wide loop.

One can merely presume that, with the advent of horsemanship, new elements of speed and distance were introduced into the hunters' range of action. Consequently, fast-footed animals such as the ostrich — which might have formerly been beyond the range of a hunter's ability outside the incubation period — lost their natural freedom in favor of many a horseman's pride. In a distinctive way, the depiction of a horseman on the Neo-Elamite seal of *Šutur-huban* seemingly ready to release a spear at a running ostrich in all probability exhibits only an idealized moment of rare achievement as ostriches were known to outrun horse and horseman. Conversely, we should not altogether discard the possibility that a successful method for hunting ostriches on horseback might have been already in place around the first half of the 6th century BC.

Whatever the situation was, it is said that ostrich hunting became a favorite activity of Bedouin Arabs who took full advantage of the ostrich's penchant for the circle. While the bird ran in a loop pursued by a small group of hunters, the rest of the group chased down the ostrich by cutting through the diameter. Such trophies however were not to be obtained without a high price, being “generally estimated that the capture of an ostrich must be at the sacrifice of the life of a horse or two” (Goldie 1968: 36). According to a review of available evidence from the Arabian Peninsula by D.T. Potts (2001), ostriches were prized for their feathers and eggs, and not for their meat.

§2.2. *The Lower Section: Lions*

Animal-headed drinking cups are well represented in the history of ancient Near Eastern art with an abundance of textual and visual references testifying to the widespread popularity of this conspicuous type of drinking vessel (Calmeyer 1979; Muscarella 1987; Stronach 1995: 175; Curtis 2000). Many animal-headed beakers were manufactured in terracotta and many more were made of metal, including gold and silver, with a varied array of animal heads including those of bulls, lions, horses, ram and goats.

One essential characteristic of a sub-group of drinking vessels is the noticeable presence of a lion head at the base of the beaker (Sum.

SAG.DU.UR.MAH / Akk. kaqqad nēše). The creator of the Arjan beaker took this already exceptional feature to a more ambitious level of artistic accomplishment by combining four formidable lion heads with an open jaw locking on to the remains of a large central rosette originally composed of eighteen petals and, most likely, a central nipple (Pl. 2a). The four overlapping heads share a common mane composed of four rows of small locks of hair reaching back to the base-line of the upper register. The faces of the lions are unusually fierce as evidenced by the wave-like wrinkle represented in the muzzle, the fixed stare of the eyes, the protruding cheeks, and the wide open mouth.

The textual and archaeological evidence of lion-headed beakers has been comprehensively studied by K. Deller (1985). From North-Syrian or Anatolian territories the form seems to have been introduced into Assyria, where it became particularly popular during the 8th century BC. As far as the distinctive lower concave ornamentation of the lion-headed beakers is concerned, it seems that from the 8th century BC to the end of the 7th century BC there was increasing intricacy in the manufacture of the beakers characterized by, not least, an increasingly bulbous projection towards the beaker's base. This evolution continued and was amended during the Achaemenid period by further lengthening the base of the beaker which, in the form of animal protomes, bent at right angles to the rest of a now lion-shaped vessel.

One of the most remarkably preserved examples of lion-headed beaker was found in the largest Phrygian tumulus at Gordion (Pl. 5a). It has been noticed, this elaborate bronze beaker appears to be a three-dimensional replica of lion-headed beakers depicted in some stone reliefs decorating the new palace of Sargon II (722-705) at Dûr-Sharrukîn, 'Fortress of Sargon' (modern Khorsabad). This correspondence directed R.S. Young to suggest a possible Phrygian origin for the beakers, the result of a tribute that Sargon could have received from king Midas of Phrygia in 718 BC (Young 1981: 123). Conversely, because related palace reliefs at Khorsabad incorporate the looting of the Urartian city of Musasir in 714 BC, an Urartian origin for the beakers has also been suggested (Young 1958; Kinnier Wilson 1972)¹¹. Both possibilities remain hypothetical and should probably be discarded in favor of an intensive Assyrian interest in lion-headed beakers

¹¹ D. Stronach raised the possibility only to largely reject it (1995: 175-195).

(Curtis 2000: 195). Given the correspondence between the lion-headed beakers represented in the Assyrian palace reliefs of Dûr-Sharrukîn and the beaker found in Arjan it is significant to review this information in detail. Indeed, the solid artistic, archaeological, and textual evidence, associated with these reliefs may prove to be of outmost value for an attempted reconstruction of the cultural context of lion-headed beakers.

To judge from drawings of reliefs from Dûr-Sharrukîn made by the French painter Eugène Flandin in 1844, the lion-headed beaker can be seen to have been associated with three different types of events that seemingly took place inside this palace (Pl. 5d): a tribute scene represented in room VI; a procession of attendants advancing towards the king represented in Façade L; and two banquet scenes represented in rooms II and VII. The tribute scene includes two pairs of foreign tributaries carrying a total of 8 lion-headed beakers (Albenda 1986, plate 66). Two more lion-headed beakers are depicted on façade L carried by an Assyrian attendant advancing towards the king (Pl. 6b; Albenda 1986: 129, plate 47). The two banquet scenes emerging from the upper registers of rooms II and VII are most significant since, in their original condition, they included large numbers of Assyrian notables holding lion-headed beakers (Pls. 6a & 7b). An earlier prototype of a similar banquet ceremony is to be found engraved on a fragment of ivory strip presumably dated to the 9th century BC (Mallowan and Davies 1970: 18, plate V, fig. 7). This earlier representation includes a king facing pairs of banqueters sitting at each side of a table and holding both bowls and, perhaps one beaker whose lower end remains unidentifiable (Pl. 5c)¹².

Rooms II and VII belonged to the sector of the palace dedicated to receptions (Pl. 5d). Room VII was a nearly square, single-entrance, room whose banquet frieze seems to have spread continuously along an upper register. Eight of the original thirteen slabs of the frieze are presently known, and because all the remaining eight have been variously damaged, only ca. 20 lion-headed beakers can presently be distinguished¹³. In a similar way, many of the slabs depicting the banquet scene from room II are lost or have been

¹² See the individual represented at the right end of the ivory strip.

¹³ It is reasonable to infer here the presence of lion-headed beakers on those slabs depicting remains of pine-cone stools, since each stool stands for a pair of banqueters. These beakers are distributed in room VII as follows (slab number / number of beakers): 4 / 2, 5/2, 8/2, 10/6, 11-12/8.

damaged; this scene most likely spread all along the north-eastern wall (from door H, with inclusion perhaps of slabs 2 through 8). As it stands, only a total number of ca. 43 lion-headed beakers exhibited in rooms II and VII can be accounted for¹⁴. In sum, despite the absence and the damage of many slabs, and working under the assumption that the lost slabs replicated the banquet ceremony without drastic changes of subject (Reade 1976: 97), it is apparent that, in their original conception, the two scenes from rooms II and VII included large groups of male individuals holding lion-headed beakers.

The depiction of a concrete event in the course of the banquet ceremony counting with the participation of lion-headed beakers underscores the emblematic centrality of this artifact. To be sure, the particular choreography of the gestures involved — i.e., the raising of a lion-headed beaker to face level — suggest that a deliberate attempt was made at representing what may be considered to be a specific moment on time. To take this idea a step further, one is invited to look at the particular way the beakers were held by the elite members of the banquet ceremony, namely: the lower section, or lion-head of the beaker, was clutched between the thumb and the fingers and held up straight across the face. Held in this position, one may argue, any existing decoration exhibited in the upper section of the beaker would have been positioned directly in line with the gaze of the beaker holder (see Pl. 6a). This likely scenario does indeed present a narrow frame of visual interaction between the visual object (the beaker) and its intended audience (the beaker holder). It also further implies that the engraved friezes found in the upper section of the beakers did play a concrete role in the visual culture of banquet ceremonies. Certainly, it is particularly compelling for the ensuing discussion that in the case of the Arjan beaker the ostrich is depicted repeated six times around the neck of the beaker and that, contrary to similar representations where a huntsman is included in hot pursuit of the bird, the hunter here seems to have been purposely omitted from the picture.

The banquet narratives from rooms VII and II are complemented in their lower registers with representations of two activities that may be said to be associated with the persona of Sargon II. In room VII we have the depiction of a bucolic hunting scene that seems to have taken place in a garden setting with presence of a kiosk on a pond or river and an altar atop a tree lined hill (Pl. 7b). In an idealized manner, this depiction might have sought

¹⁴ Distributed in room number II as follows (slab number / number of beakers): 10/6, 13/4, 14-15/10 (?), 16-17/10, 18-19/6, slab 1 next to Door H/7.

to replicate an actual landscape observed from atop the northwestern wall of the palace, as room VII was part of the suite of private quarters overlooking the probable location of the royal pleasure garden (Russell 1999: 234). Room II incorporated selected warfare episodes of military campaigns that took place in the Zagros' eastern frontier during the years 717 and 716 BC. In particular, we can observe depictions of towns captioned as: *Harhar* (Albenda 1986: 272, plate 112)¹⁵, situated in the region of modern Kermanshāh and captured by Sargon II in 716 BC (Vallat 1993: 83); *Kišesim*, a town associated with Harhar in the province of Parsuaš, also captured by Sargon in 716 BC (Albenda 1986: 109, 273; Vallat 1993: 141)¹⁶; and *Bit-Bagaya*, located in the vicinity of Harhar and captured in the year 715 BC (Albenda 1986: 109).¹⁷

To recapitulate, according to the extant evidence provided by the Assyrian stone reliefs from rooms II and VII, large numbers of single lion-headed beakers were represented in the monumental banquet friezes from Dûr-Sharrukîn. This evidence underscores the rather obvious existence of a vigorous bronze industry proficient in manufacturing high quality lion-headed beakers¹⁸. One could argue for the prospect that these drinking beakers were result of tribute from the east; and succinctly support this point with the tribute representation depicted in room VI. A second possibility suggests that these beakers may have arrived in Assyria from the looted Urartian city of Musasir; there is however no explicit artistic or textual evidence to support this point. This omission is even more arresting when one considers the detailed textual account of Sargon's looting of

¹⁵ Kibaba, the city governor of Harhar, might have attempted an alliance with Daltâ of Ellipi (Luckenbill, 1989: 6, 29).

¹⁶ For discussion of the additional epigraphs in room II of *Kindau*, [*T*]ikrakka (*Shikrakki*), and *Ganguhtu* see J. M. Russell (1999: 115-116 and 120).

¹⁷ For a discussion on the dating sequence see J. Reade (1976: 102-104) and J. M. Russell (1999: 113, 115, 120).

¹⁸ See J. Curtis (1998) for "Assyria as a Bronze working Centre in the Late Assyrian period." Texts from the Assyrian capital at Nineveh mentioning lion-heads made of metal could perhaps refer to beakers (see K. Deller, as in n. 16: 331; thus, letter of Sîn-bêl-[], line 18; pg. 332, letter of Nergal-Sharrani, line 11). The famous royal banquet of Ashurnasirpal II for the dedication of the NW palace at Nimrud where he copiously wine and dined 69,574 invitees must have required an extensive viticulture infrastructure comprising storage units and cellars and a healthy metallurgical infrastructure to manufacture large amounts of prestige beakers; See J. V. Kinnier Wilson (1972) and F.M. Fales (1994: 361-370, nt. 52).

the royal palace and temple of Haldi at Musasir¹⁹. Conversely, there is no reason to believe the Assyrian workshops were incapable of manufacturing prestigious beaker of the type exemplified here. Thus, and to reiterate a view shared by many scholars (Mallowan 1966: 206; Muscarella 1987: 153; Stronach 1995: 15; Curtis 2000: 19), even if it cannot be fully substantiated by the evidence at hand, it is more than likely that the lion-headed beakers represented at Khorsabad were luxury artifacts associated with the patronage of the Assyrian king Sargon II and that, consequently, the lion-headed beaker found at Gordion is better understood as an elite gift *from* Sargon II *to* king Midas of Phrygia after 718 B.C.

§3. Determining a cultural context for lion-headed beakers

The present study of the Arjan beaker has directed our attention to the existence of large numbers of lion-headed beakers whose function was strongly linked to elite drinking ceremonial banquets seemingly celebrating the military and hunting exploits of the Assyrian king Sargon II (722-705 BC)²⁰.

In studying the assembly of banquet participants depicted in the Assyrian reliefs from Khorsabad, three main groups of male individuals holding lion-headed beakers can be distinguished. There are eunuch cup-bearers whose function was to fill the beakers and bring them to bearded dignitaries (Pls. 6a & 7b); there is a small group of standing individuals wearing a knee-length kilt, armed with a sword, and holding some type of insignia in the form of a staff (Pl. 6a); the remaining dignitaries wear ankle-length ceremonial garments and are arranged in pairs sitting on stools across square tables (Pls. 6a & 7b). A difference in dress code between standing and sitting participants suggests the unequal ranking status of these two groups²¹. In addition, considering the absence of many missing slabs and in light of the evidence presented by the 9th century BC ivory

¹⁹ According to the translations by F. Thureau-Dangin (1912) of Sargon's letter to Aššur (Sargon's 8th military campaign) and fragments from the Assyrian Annals and Sargon's Prism B; See also A.L. Oppenheim (1960).

²⁰ For an alternative viewpoint regarding the ritual function of the banquets see discussion in J. Reade (2005).

²¹ In fact, the quote included as header to this article (Kinnier Wilson 1972: 43) suggests the standing dignitaries could very well represent the Emirs, and the sitting dignitaries the king's sons.

fragment (Pl. 5c), I would suggest that both banquet scenes did originally include the presence of the Assyrian king Sargon II²².

According to J. V. Kinnier Wilson, the two male groups holding the lion-headed beakers in the extant reliefs from Khorsabad may be identified as members of the king's mess or *rabâni*, a selective group of high ranking officials, the military and ruling elite of the Assyrian empire which included princes and the close entourage. "In fact one may reasonably think," specifies Kinnier Wilson (1972: 40), "that a proportion of the *rabâni* were princes born to the king by the ladies of his harem." It is thus possible, one is tempted to say, that a subtext in these reliefs — something that would have been well known to an Assyrian audience — was in part to advertise the members of Sargon's male progeny, i.e. the singular strength of the royal blood line²³. If, as it has been suggested here, the banquet celebrations depicted at Khorsabad should be closely linked to the hunting and military success of the Assyrian elites, the presence of a lion-headed beaker in the hands of the Assyrian mighty may be considered a deliberate attempt to underline the majestic but also fierce and indomitable qualities of the king and the ruling elite; Qualities, indeed, of direct bearing on the celebrated 'taming' of the difficult eastern front. Furthermore, a nuanced dimension of banquet celebration treated only succinctly pertains to the ritual dimension linking the successful confrontation of an enemy or hunted prey with the intentional taking of life (i.e. the spilling of blood)²⁴.

²² *Contra* P. Albenda who sees no evidence of royal participation on the banquet scene; Albenda believes this point to be justified on the ground that Sargon II would have been represented in a substantially different way from the other banqueters, i.e. similarly to Assurnasirpal II in the 'drinking from the cup' scene depicted in the monumental reliefs at Nimrud (Albenda 1986: 104; with reference to E. Strommenger 1962, pls. 194-195). I must differ and point out the less monumental, but equally royal, representation of the king in the above mentioned ivory strip. Accordingly, a pair of bodyguards stand armed behind the king seated on the throne with a cup-bearer and a table standing between him and the next group of banqueters (Fig. 15). J. Reade reached a similar conclusion in his reconstruction of room 7 where he proposes that the king must have been represented on the slab opposite the door (Reade 1976: 98).

²³ I am most grateful to Professor David Stronach for kindly offering his seasoned insight on this analysis.

²⁴ This overlap of imagery and symbolic meaning converges into another symbol of power including the figure of the lion: the royal-seal used in palace administration by several generations of Assyrian kings, including Sargon II (Sachs 1953; Millard 1965). This stamp seal epitomizes the heroic struggle of the Assyrian monarch: an unambiguous encounter whose predetermined outcome is visibly proclaimed by the grasping of a rampant lion's mane and the composed stabbing of its chest (Figure 21). For discussion on the motif of the hero holding the lion and royal ideology see P. Albenda (1986: 102).

We are dealing here with a relationship of conspicuous symbolism inasmuch it is believed that the drink of choice for such ceremonies was none other but wine.

Following a perceptive article by P. Michalowski (1994), modern western moral values regarding the consumption of alcohol, sex, and food, appear to be of little help when assessing the role of wine in the ancient Near East. Alcoholic consumption and wine drinking in particular, was a social event of ambiguous character bracketed in the context of ceremonial banquets “allowing for a free play of language and sex in a structured environment. As a result we encounter sexual license, formalized debate, and comment on rank, status, and order in society.”²⁵ In this context, it is reasonable to infer that receptacles such as lion-headed beakers manufactured to partake in wine drinking ceremonies must have been associated with the inherent intoxicating properties of wine. To some extent, the formal outward display of self-control and dignified behavior by the Assyrian elites reveals a qualified response to the potential apprehension and unpredictable results associated with alcoholic consumption. Hence, in so many ways the lion-headed beaker emerges as the emblematic receptacle of a complex network of associations encapsulating elements of ritual, wine consumption, hunting, and warfare. This noteworthy blend of associations mirrors significant aspects of the Assyrian ethos and reveals an accomplished sense of interaction between key formal, practical and aesthetic, elements associated with lion-headed beakers and with their intended audience.

To conclude, I would like to indulge these observations for a moment and attempt at reconstructing a hypothetical scenario with the Arjan beaker and its complementary decoration emerging in the hand of an imaginary beaker holder. The information inferred from the Dûr-Sharrukîn banquet reliefs suggests that lion-headed beakers had a precise function and a visual dimension stimulated by the enactment of a concrete gesture involving the raising of the beaker directly across the face. Indeed, in my opinion, it is probably not coincidental that the Arjan beaker exhibits a repeated row of six running ostriches around its upper section and that, contrary to similar representations, the hunter can be said to have been purposely omitted from the representation. This fact draws our attention to a purely speculative view suggesting that those individuals familiar with ostriches' behavior may have been able to capture the clever visual metaphor articulated in the beaker's

²⁵ Thus Michalowski 1994: 40.

composition as ostriches are in the habit of fleeing in a circle. To further speculate, the absence of a hunter invites to wonder whether a humoristic note was intended here, namely: whether it is the same ostrich that freely runs in a circle unconcerned by a human predator or if it is the gaze of an illustrious drinker — perhaps of noble blood, indeed a great hunter himself! — that holding the lion-headed beaker by its base might have fleetingly experienced the flattering illusion of grabbing at an ostrich on the run (...).

In all probability, we will never know; However, if the wise words of the Prophet Job are to be of any guidance in this matter, it would appear that, at least for the time being, it was the ostrich who had the final laugh: “...when [the ostrich] rouses herself to flee (spreads her feathers), she laughs at horse and rider” (Job 39: 18)²⁶.

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²⁶ This quote and various aspects related to the analysis of the Arjan beaker have been inspired by Dominique Collon's humorous and instructive article: *First Catch your Ostrich* (1998). I am also grateful to D.T. Potts, for insightful remarks and for his own exploration of the topic (see Potts 2001).

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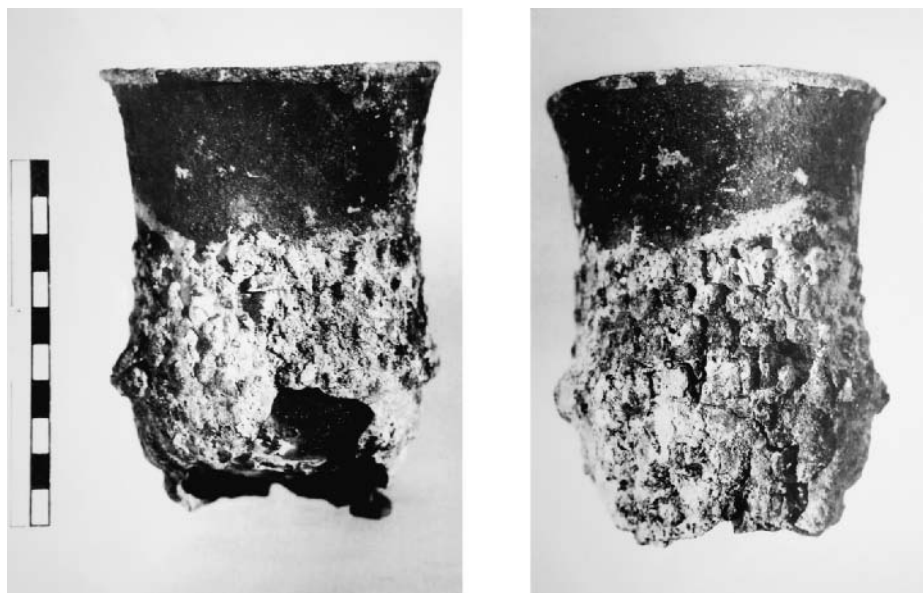
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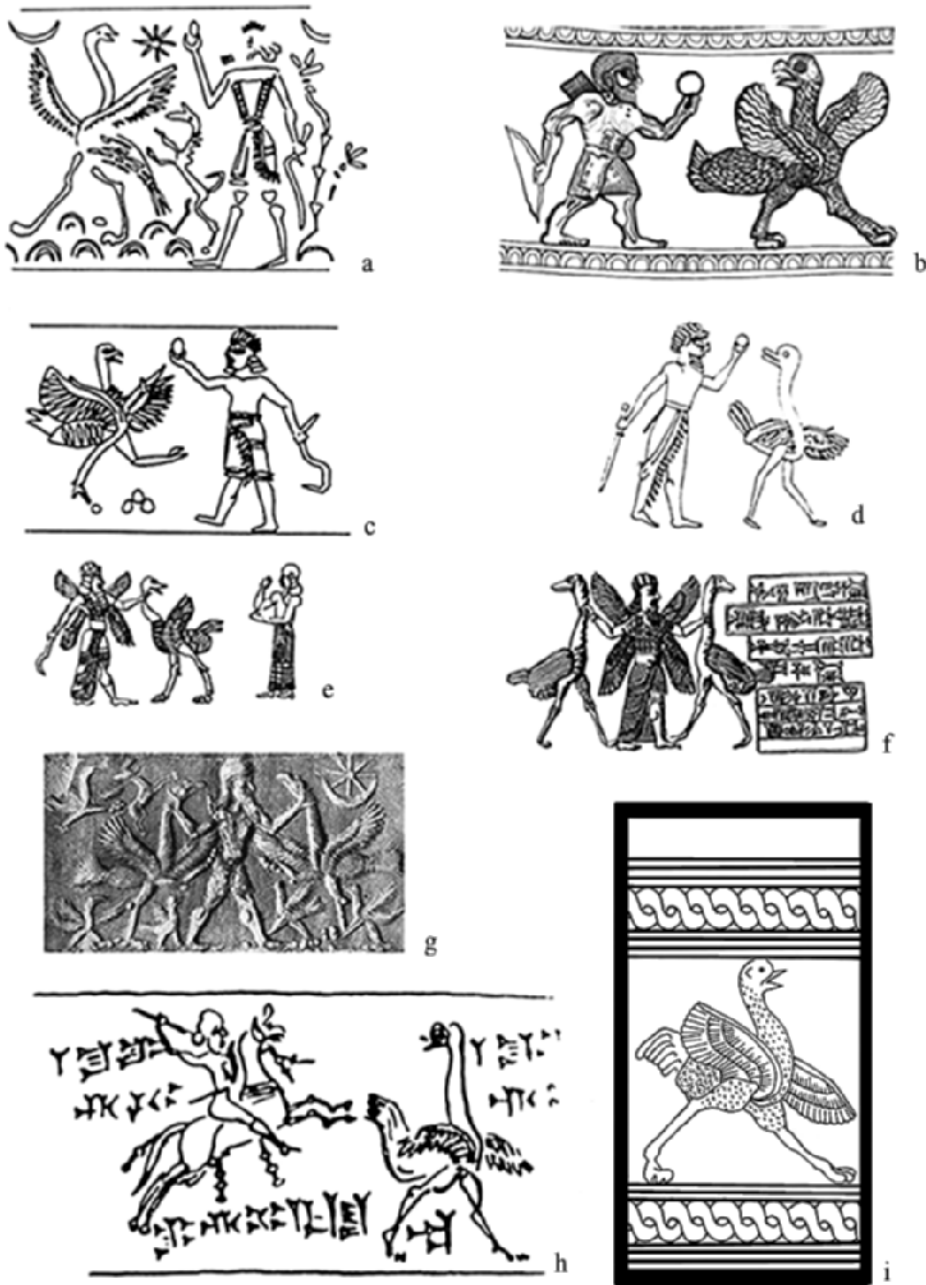
Pl. 1. View of the Arjan beaker (photo by the author).



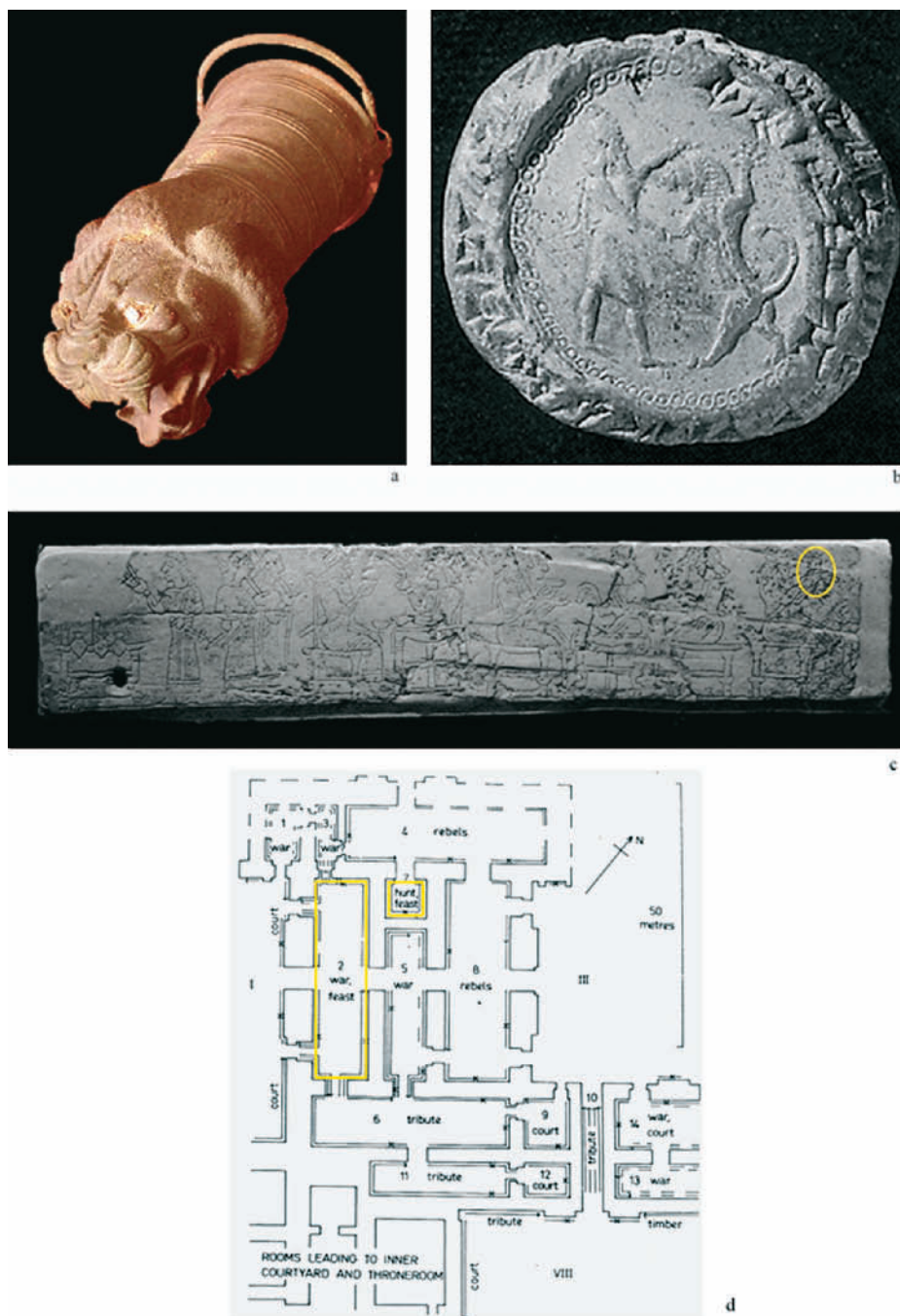
Pl. 2. a. Detail of the lower section of the Arjan beaker (photo by the author); b. Detail of the upper sections of the Arjan beaker (photo by the author) with line-drawing of the ostrich depicted on the upper register of the Arjan beaker (drawing by the author).



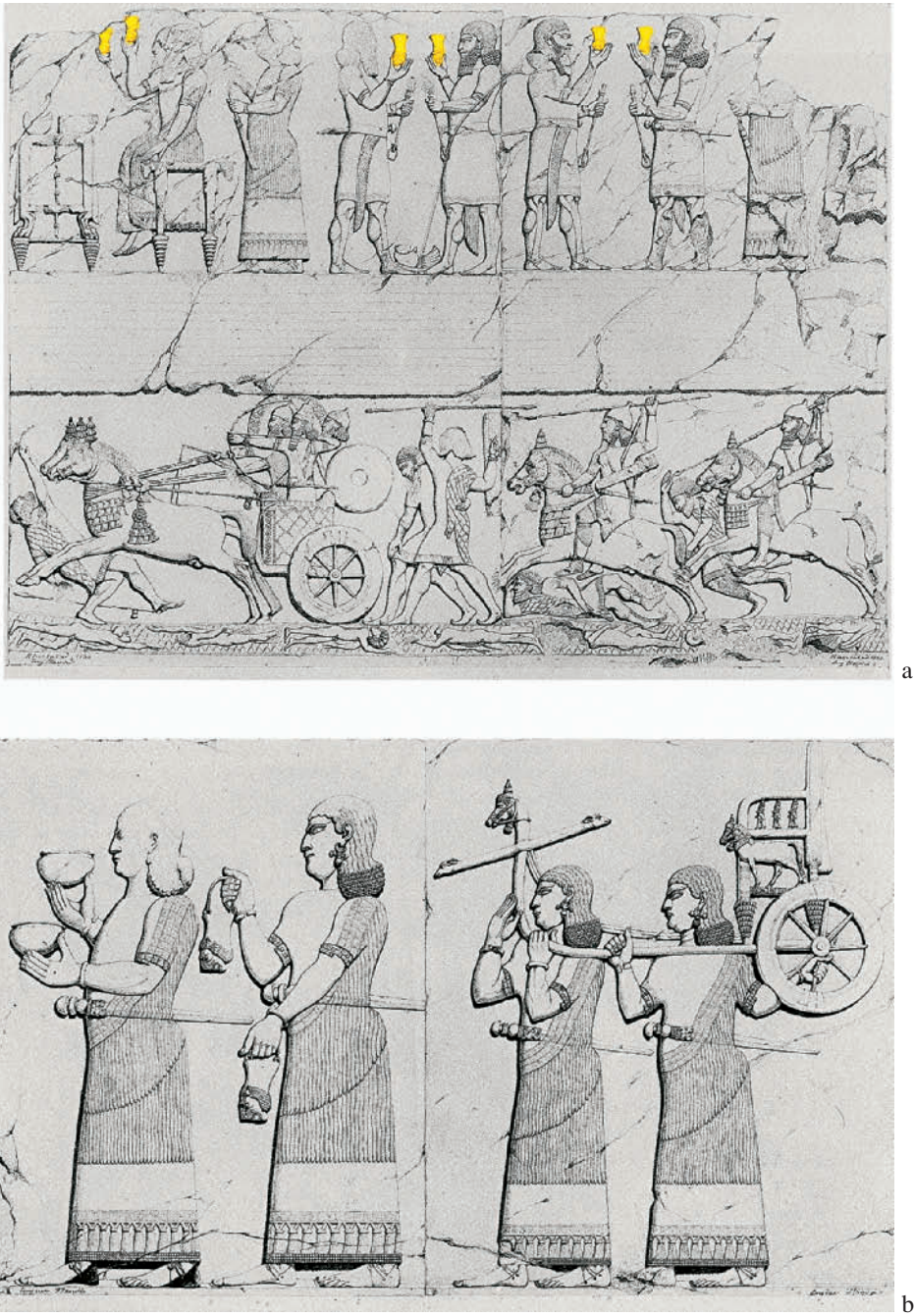
Pl. 3 a-b. Two views of the Arjan beaker before restoration (images courtesy of the National Museum of Iran).



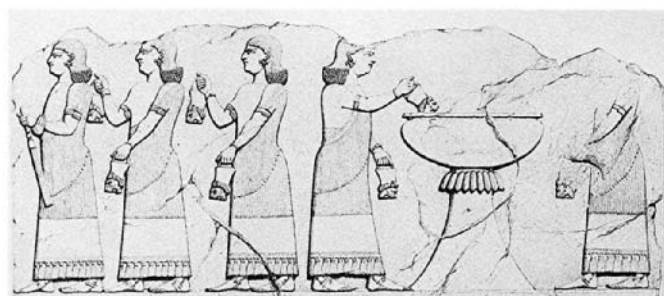
Pl. 4. a. Line-drawing of 8th century BC (?) seal from Iran (?) (after Collon D., 1998: 28, fig. 3); b. Line-drawing of register from a "Luristan" beaker; h. 14.5 cm, diam: 5.5 cm, hammered (from *Ancient Bronzes, Ceramics and seals, Los Angeles County Museum of Art* 1981: 88, fig. 432, M. 76.97.355); c. Line-drawing of cylinder seal, ca. 8th century BC (after Collon, D., 1998: 28, fig. 2); d. Line-drawing of cylinder seal (after Collon, D., 1998: 30, fig. 7b); e. Line drawing of cylinder seal (after Ward, W.H., 1910. *The Seal Cylinders of Western Asia*: 203, fig. 588); f. Seal of King Urzama of Musasir, end 8th century BC (after Ward, W.H., 1910, *The Seal Cylinders of Western Asia*: 203, fig. 589); g. Photograph of cylinder seal; man grasping two ostriches by the throat; British Museum 102397 (after Wiseman, D.J., 1959. *Cylinders Seals of Western Asia*, Batchworth Press, London: fig. 73); h. Seal drawing of Šutur-huban son of Huban-tašu (after Amiet, P., *La glyptique de la fin de l'Elam, Art Asiatiques* 28, 1973: plate VIII, fig. 56); i. Line-drawing of the ostrich found on the upper register of the Arjan beaker (drawing by the author).



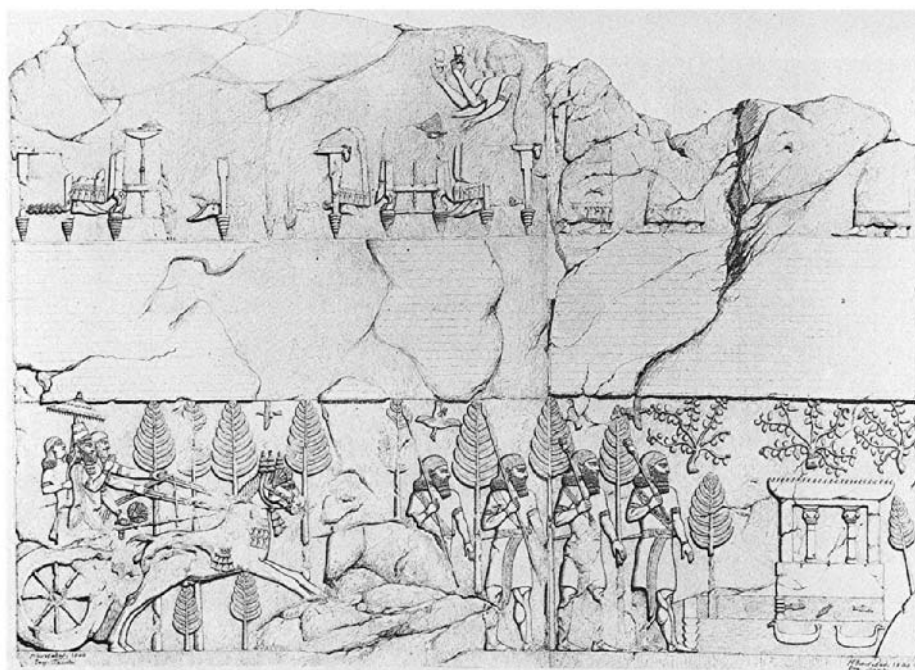
Pl. 5. a. Lion-headed beaker from Gordion (photo scan after catalogue from the Anadolu Medeniyetleri Müzesi, Ankara; *The Museum of Anatolia Civilizations*: 173, fig. 280); b. Impression of a 'Royal seal' from Nineveh, 715 BC; after Curtis J.E. & Reade J.E., *Art and Empire, Treasures from Assyria in the British Museum* (The Metropolitan Museum of Art) New York, 1995: 188, fig. 194. Copyright Trustees of the British Museum, WA Sm2276; c. Ivory plaque fragment from Fort Shalmaneser SO192, Room SE9, ND7576. IN V, 185. G. Photograph after Herrmann, G., Coffey H. & Laidlaw, S., *The Published Ivories from Fort Shalmaneser, a scanned archive of photographs* (British School of Archaeology in Iraq, 2004): 22; d. Reception area of Sargon's palace at Khorsabad; after Reade, J., 1979. Ideology and Propaganda in Assyrian Art, in: Larsen M.T. (ed.), *Power and Propaganda, Mesopotamia vol. 7* (Akademisk Forlag), Copenhagen: 337, fig. 16.



Pl. 6. a. Room II, slabs 18-19. Drawing by E. Flandin (after Albenda, P., 1986: plate 121);
 b. Façade L, slabs 26-27. Drawing by E. Flandin (after Albenda P., 1986: plate 47).



a



b

Pl. 7. a. Room II, slab 1 in door H. Drawing by E. Flandin (after Albenda, P., 1986: plate 123); b. Room VII, slabs 11-12. Drawing by E. Flandin (after Albenda, P., 1986: plate 89).

GREAT BALLS OF FIRE? PYRITES, METEORITES AND METEOR-WRONGS FROM ANCIENT IRAN

BY

Bruno OVERLAET

(Royal Museums of Art and History, Brussels / Ghent University, Ghent)

Abstract: Metallic nodules found in the Siyalk II settlement and in Iron Age III tombs in Luristan, Iran, were identified by the excavators as meteorites. However, these identifications must be questioned. The Siyalk nodules could be of telluric origin. The four Luristan specimens are identified as pyrite nodules. It is suggested that such nodules were used for fire-making, although other functions such as a use as sling balls are not to be excluded either.

Keywords: pyrite, meteorite, fire-making, Luristan, Tepe Siyalk, Chamahzi Mumah, Gul Khanan Murdah, Iran.

Meteors and meteor showers or shooting stars, like comets and other celestial anomalies, were in antiquity widely associated with acts of gods and were often seen as omens or divine warnings. When their fall had been witnessed and their remains could be retrieved, they could be venerated and placed in temples. A well known example is the stone (in antiquity considered to be a meteorite) of Emesa (Cumont 1905: 2219-2222; Turcan 1985; Gradel 2004: 351-352). It was associated with the sun god and worshipped in its temple in Emesa, Syria. It was taken from its sanctuary to Rome by its high priest Marcus Aurelius Antoninus who adopted the sun god's name Elagabalus on becoming emperor in 218 A.D. Two temples were constructed for it in Rome and its worship was declared the foremost of the official Roman cults. As such, it became even more important than the Roman Jupiter cult and a yearly religious procession with the stone was illustrated on Elagabal's coins. It turned out to be a religious interlude, however, which ended on the emperor's assassination and the return of the stone to Emesa.

It is but one of the many examples that show the important role meteorites played in Greco-Roman, as well as in pre-Islamic Near Eastern religious

beliefs and traditions (Newton 1897; Farrington 1900: 199-202). The most familiar living example of “meteor worship” from the Near East is the black stone in the Ka’aba in Mecca. Although a physical analysis is not possible, all available information indicates that this is an impactite (fused sand and meteoritic material) and not an actual meteorite. It too had a turbulent history since its acceptance by Mohammed. It was taken from Mecca in 930 A.D., was returned 21 years later, survived burnings and flooding of the Ka’aba and is now shattered into 15 pieces, held together in a silver setting. It demonstrates that celestial signs remained important in early Islam. Tradition relates meteor showers with the birth of Mohammad and with his first revelations. According to Al Yaqubi “*on the Prophets revelation, the devils were struck by meteors from the sky*” (Rada & Stephenson 1992: 6, 10-11). Such accounts testify to the strength of these ancient Near Eastern beliefs in celestial omens (see Bjorkman 1973). Similar celestial events are also associated with other and earlier prophets, such as Zoroaster (meteor showers associated with his preaching and meteor worship, see Alizadeh Gharib 1999; 2002) and Jesus Christ (the “star of Bethlehem”, a comet, a shooting star or a conjunction of planets on his birth).

While on the one hand historic references testify to the veneration of meteorites as gods or divine emanations and to their association with magical or spiritual powers, there was on the other hand also a much more “down to earth” use for them. The ferrous meteorites (only a small percentage of all meteorites!) were a valued source for quality iron, traded and used throughout the ancient Near East (Bjorkman 1973: 110-113). Its natural nickel content would make meteoritic iron harder and more corrosion resistant than common iron and ferrous meteorites would thus always have remained a valuable raw material. It must be noted, however, that not all nickel-rich iron is necessarily of meteoritic origin (Reiter 1997: 344-348). Important telluric nickel-rich iron sources are known and more metallurgical research on early iron is needed to distinguish telluric from meteoritic iron. In 1989 Photos even postulated that “Early nickel-rich artifacts of unquestionably meteoritic origin have not been clearly identified in the east Mediterranean.” (Photos 1989: 406).

When meteoritic iron was used, it may often have been unknowingly. When its origin was known, on the other hand, it would certainly attract interest. A celestial origin would naturally make it a sought after material for regalia, usually high quality weapons (Farrington 1900: 206). A fine illustration of this practice is the fate of a meteorite that fell in India on

April 10, 1621. Shah Jahangir, the fourth Mogul ruler ordered two swords, a dagger and a knife to be made from it. The 26.5 cm. long gold-inlaid knife is now kept in the collection of the Freer Gallery of Art in Washington, D.C. (inv. F1955.27a-b).

Archaeological evidence is surprisingly rare as hardly any meteorites have been reported from archaeological digs in Iran. This may have various reasons. Field archaeologists rarely have the specific geological knowledge needed to correctly recognise and/or identify (ferrous) meteorites and they may in some cases have been overlooked. Of course, their use as a source of iron, also took them out of circulation in their original form.

The first ferrous “meteorites” reported from archaeological digs in Iran were discovered by Roman Ghirshman at Tepe Siyalk. They are not mentioned in detail in his excavation report but are only discussed in a short technical addendum by L. Halm (Halm 1938: 206). From this text it appears that three nodules were found in the Chalcolithic Siyalk II “habitation area”. Her description is worth citing in full: *Pièce III. Trois boulets. (Sialk, Période II) Ces boulets, découverts dans les habitations, avaient probablement un usage domestique et étaient peut-être employés comme polissoirs. Ils avaient une forme approximativement sphérique et étaient très lourds et très durs. De plus, ils présentaient en surface de curieuses cristallisations. Tous trois se sont montrés sensibles à l'action de l'aimant, et constitués d'oxyde de fer, en majorité magnétique. On a également constaté la présence de fer libre. En certains points de leur cassure, on trouve des nids d'oxyde ferrique, bien reconnaissable à sa coloration rouge, et quelques grains de quartz. Par places également, on note une combinaison de la silice et du fer. Les cristallisations tout à fait particulières que présente surtout le boulet C, et qu'on peut mettre en évidence par le polissage d'une section, cristallisations connues sous le nom de « structure de Widmannstätten », sont caractéristiques des météorites. Il est donc à peu près certain que ces boulets sont des fragments de météore, recueillis et utilisés en raison de leur poids et de leur dureté.* Halm thus strongly suggests a meteorite identification (« à peu près certain ») but cautiously leaves other options open.

There are no photographs of these nodules and the provided data do not allow making firm conclusions. The fact that the three nodules are attracted to a magnet and particularly that the one that was polished was

said to display the *Widmanstätten* structure, are indeed strong arguments in favour of meteorite identification. The *Widmanstätten* structure is tell-tale of a high nickel contents and a slow cooling process. However, without photographs documenting this *Widmanstätten* structure one must remain cautious. Telluric nickel-rich iron alloys are also known (Rickard 1941: 56-60; Photos 1989: 405-406; Moorey 1994: 279) and mistakes have been made. One such example is the wrongful identification of iron nodules with 2-3 % nickel from basaltic rocks on Disko Island, western Greenland (Rickard 1941: 58; Photos 1989: 405). When they were discovered in 1870 by Adolf Nordenskiöld he identified them as meteorites because of their nickel content and (an apparently wrongly interpreted) *Widmanstätten* structure. The largest of these “meteorites” was reported to weigh 21 tons and Nordenskiöld transported one of 19 tons to the Royal Academy at Stockholm and another of over 8 tons to the museum in Copenhagen. Shortly afterwards, however, it was attested that the iron was formed within the basalt and was thus of telluric origin. Its nickel content is below that of most meteorites and its *Widmanstätten* structure was different from that found in meteorites (see Rickard 1941: 60 note 1). Inuit Eskimos did use these telluric iron nodules from Disko island as a source of iron just like they used genuine meteorites at other locations in Greenland, for example at Cape York (Rickard 1941: 56-59, pl. I, IIB; Photos 1989: 405).

The reported *Widmanstätten* structure is, if correctly identified, a sound argument to identify these nodules as meteorites, but we lack the full documentation. A very strong argument against meteorite identification, however, is their shape. Contrary to popular belief, meteorites are never round but are of irregular shape. With the limited evidence at hand, the question remains unresolved, but one should be cautious about the meteorite identification in view of their description as “boules”.

There is no information whether these three nodules were found together or on different locations in the Siyalk II level. The excavator himself does not mention the items in his archaeological report. The only information remains the above cited remarks from the geologist who states that they come from the level II settlement. Unless original excavation files would turn up, there is no way to evaluate the reliability of the Siyalk II association and to rule out the possibility of their being intrusive. Yet, the Siyalk nodules have carried their weight in metallurgical discussions. Waldbaum mentions the three balls in his list of 14 iron objects predating 3000 B.C.E.

from Mesopotamia, Iran and Egypt. He describes them as “nearly spherical balls” (Waldbaum 1980: 69-70). Photos includes them in her listing of early nickel-rich iron artefacts. She refers only to Waldbaum, yet, lists them as *beads*, dating them to 4600-4100 B.C.E. (Photos 1989: 407-408). Her research focused on the production of telluric nickel-rich *smelted* iron. Particularly relevant in the present discussion is her analyses of a bloom fragment discovered at Petres in north-west Greece. This bloom fragment with a diameter of ca. 5cm had an average nickel content of 3.2 per cent and displayed the *Widmanstätten* structure (Photos 1989: 411-412, fig. 1). It goes to show that unless the Siyalk balls can be located and properly examined, little can at present be said about their true character.

Halm suggested they could have been used for polishing in view of their weight and hardness. This idea was picked up by Pigott who is of the opinion, however, that the burnishing nodules were most probably magnetite ore (Pigott 1984: 625). The crystalline matrix of a magnetite or hematite iron ore nodule may have been confused with the *Widmanstätten* crystallographic pattern. He reported on the discovery of hematite nodules in a metal workshop at Hasanlu (Pigott 1999: 91) and observed other hematite nodules whilst on excavations at Tall-i Malyan, Godin Tepe and Tepe Hissar (personal communication). If the Siyalk nodules did consist of nickel-rich iron, however, one might have to envisage also another type of use for them. The hardness of nickel-iron alloys, either of telluric or meteoritic origin could be used with flint as strike-a-lights.

Another report of “small heavy nodules” comes from Iron Age III cist tombs excavated by the Belgian Archaeological Mission in Iran (BAMI) in Pusht-i Kuh Luristan (on the local Iron Age III, see Overlaet 2005: 14-16, pl. 10-14). They were registered by the excavator Louis Vanden Berghe of Ghent University as “meteorites” and subsequently published as such in the final excavation reports by E. Haerinck & B. Overlaet. Two tombs at the graveyard of Gul Khanan Murdah (tombs 53 and 61) that were excavated in 1978 each contained one nodule (Haerinck & Overlaet 1999: 178, pl. 100, 102, 114d). A tomb at Chamahzi Mumah (tomb 37), excavated in 1975, contained two (Haerinck & Overlaet 1998: 41, fig. 36-37, pl. 72b).

The tombs at Gul Khanan Murdah provide little information. Tomb 53 did not contain any other burial goods and tomb 61 only contained a pottery vessel and a small bronze ring. Their position in the tomb is uninformative since skeletal remains were not preserved. The nodule from tomb

53 was deposited at the Iran National Museum at Tehran where it is registered as inv. Nr. GM.7551 (pl. 3). A visual inspection of it could be made during a visit in November 2006, kindly facilitated by the curator Mrs Zahra Jaffar-Mohammadi. The object is a round nodule with a diameter of about 2.6 cm. and was not attracted to a magnet. It is not a meteorite but a typical pyrite nodule.

The Chamahzi Mumah tomb 37 was in view of the burial goods one of the wealthiest tombs at the graveyard (pl. 1-3). The stone cist tomb was indicated at the antique surface, like all the tombs at the site, with a circle of stones. It was located on the edge of the excavation area and only half of the outside structure was fully excavated (pl. 1-2). Unusual for Pusht-i Kuh tombs was that hardly any earth had infiltrated in the tomb. When the first cap stone was removed, the burial goods and skeletal remains were immediately visible. The tomb was that of a warrior who had been buried with his arms (sword, mace, arrows and shield), his jewellery (earrings), two pottery vessels, a decorated bronze bowl and the two nodules. Based on the existing photographs of these nodules (2.0 to 2.3 cm in diameter), these are also to be identified as pyrite nodules.

Pyrite or “fool’s gold” is an iron disulfide (FeS_2), the name of which is derived from the Greek “pyr” or “fire”, probably a reference to the sparks it produces when hit against flint. Pyrite is commonly found in organic-rich marine sediments, often as a fossil replacement. The amount of pyritisation in marine sediments is largely determined by bacteriological activity and by the availability of sulphate, reactive iron and reactive organic materials during the formation of these sediments. Pyrite fossils and nodules are, for example, commonly found in the white chalk cliffs of Northern France and Southern England. The Wiltshire Heritage Museum reports on its website that often “several pyrite nodules a week”, similar to those from the Luristan tombs, are brought to them by people who think that they have found a meteorite (<http://www.wiltshireheritage.org.uk/galleries/index.php?Action=4&obID=96&home=1> consulted 24.11.2006). It testifies to the widespread confusion about the shape and character of meteorites, usually wrongfully expected to be globular like hail stones. This also raises the question about the perception of such pyrites in antiquity, on which, of course, we have no information.

Important marine deposits with fossil shells are known to exist at several locations in Luristan and were already reported on by the first European

travellers (Jéquier 1968: 134-135, 137-138; Jaunay 1997: 313). An abundance of marine fossils as noticed in Pusht-i Kuh by the archaeologists of the BAMI near Maimah and at Chamahzi Mumah. Fossil rich layers were present above the Chamahzi Mumah graveyard (see Pl. 4). Isolated fossils, probably eroded from these layers were also found in the riverbed. It thus seems very probable that the pyrite nodules are of local origin. It is not clear how common they may be in the soils at Chamahzi Mumah but the fact that two were found placed together in the corner of a tomb, excludes the possibility that their presence is accidental. They were clearly deliberately placed in the tomb. One can only speculate about their precise function or significance. They may have been considered as a charm or a curiosity (or wrongfully as a meteorite?) but a more practical function is also possible (sling-stones?). Although the one specimen preserved in the Iran Bastan Museum did not have any apparent scratch marks, they could also have been used for fire making. The most common way to produce fire using pyrites is to strike or rub them against a flint. This leaves characteristic wear-traces on the flints (Stapert & Johansen 1999a & b) but since no flints, apart from some small arrowheads, were recovered from the Iron Age III tombs, this can not be verified. Striking or rubbing two pyrites against each other is also a possibility. This way of fire-making is known to have been used by some of the Inuit Eskimo (Parry 1824: 504; Stapert & Johansen 1999b: 766) and could account for the presence of two nodules in the Chamahzi Mumah tomb. Ethnographic evidence from Luristan on the use of pyrites as strike-a-lights is lacking. Like everywhere, pyrite was replaced by the superior steel as soon as this material became available. A small pouch with a strike-a-light made of an old steel knife, tinder and flints was acquired in 1935 by the Danish scholar Carl Gunnar Feilberg (1894-1972) from the Papi tribe in the Bala Gariveh of Luristan (Demant-Mortensen 1993: 335-336, cat. nr. 343). It is now in the ethnographic collection of the National Museum of Denmark (inv. nr. E.355).

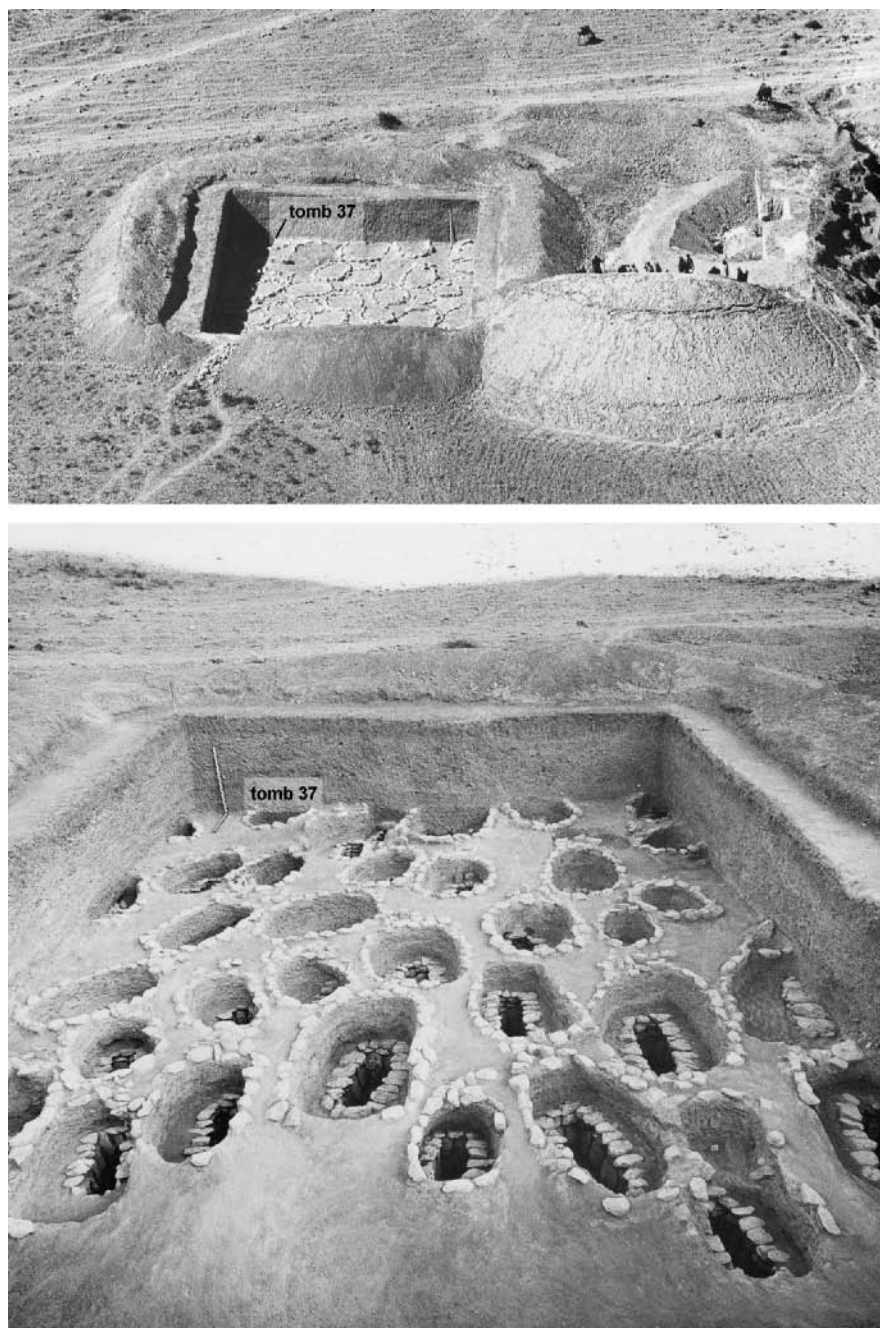
One must conclude that in spite of the relatively abundant textual references to meteor showers and meteorites in the ancient Near East, there are at present no ascertained finds of meteorites from Iranian pre-Islamic settlements or graveyards. The finds from Tepe Siyalk II were, in view of their shape, rather of telluric origin than meteoritic. Precise information on their discovery is lacking. Meteorites reported from Luristan turned out to be pyrites, probably of local origin. Although there are no specific

indications, one might suggest that the Luristan pyrites (and the Siyalk nodules?) may have had a practical function as strike-a-lights for fire-making. Nevertheless, other functions, for example as sling-balls, can not be excluded.

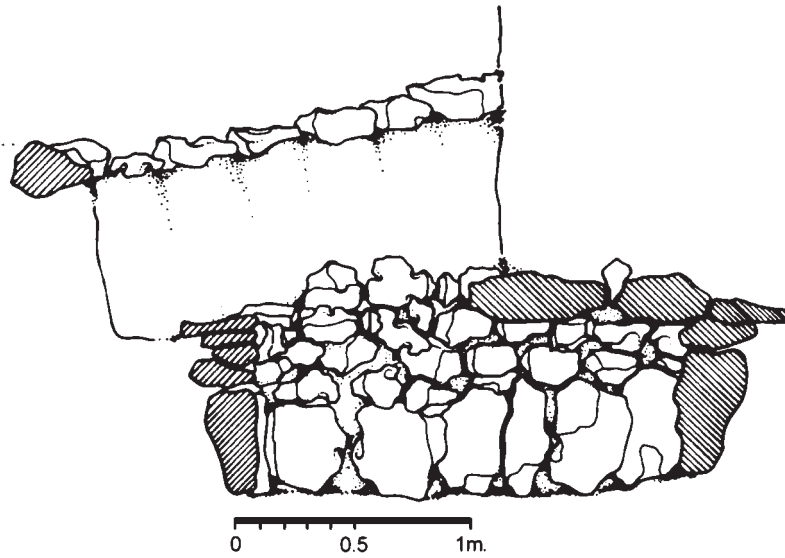
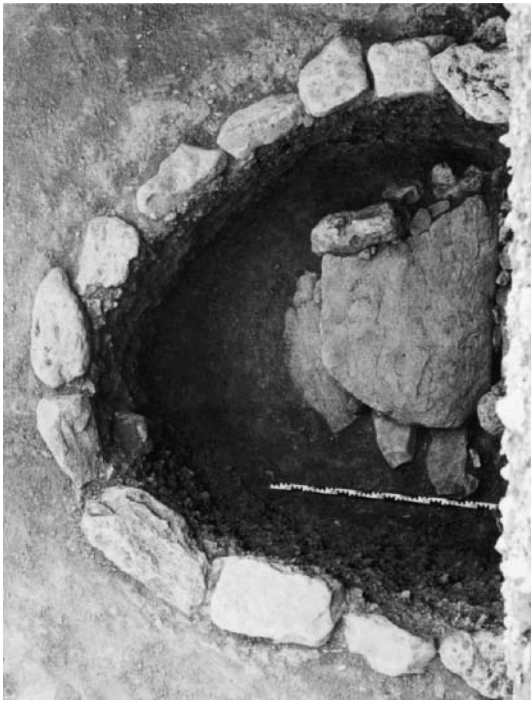
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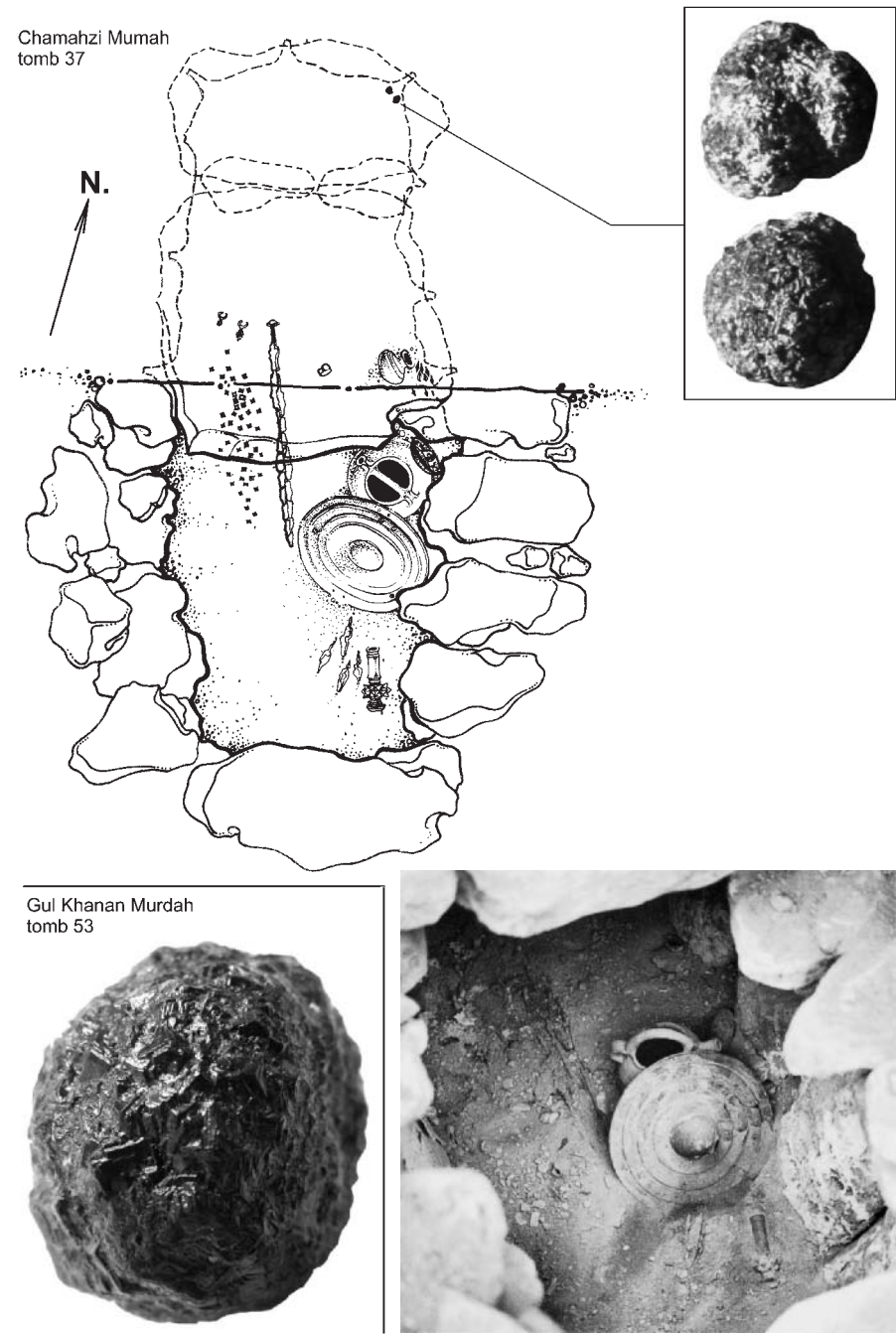
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Pl. 1. The Chamahzi Mumah 1975 excavations with the location of tomb 37. On the lower picture, the cap stones of the tombs have been removed.



Pl. 2. Chamahzi Mumah tomb 37, located partially outside the excavated plot. Top view from the edge of the excavation plot (cap stone still in place) and section of the tomb (cap stone removed).



Pl. 3. Chamahzi Mumah tomb 37: Plan of the tomb with the location of the pyrite nodules and view inside the tomb after the removal of the cap stone. Gul Khanan Murdah tomb 53: photo of the pyrite nodule, now kept in the Iran Bastan Museum (slightly enlarged).



Pl. 4. View of the Chamahzi Mumah cliff with fossil rich layers near the excavation area and fossil shells found on top of the cliff and in the riverbed.

THE SILVER HOARD FROM NUSH-I JAN REVISITED

BY

Péter VARGYAS

(University of Pécs, Hungary)

Abstract: The paper reconsiders some conclusions that have been put forward concerning the silver hoard found at the Median site Nush-i Jan and discusses its implications to Median history and economy in general. It concludes that Median society seems to have been able to adapt to the use of money and to the Near Eastern way of registering accumulated incomes, a fact that points toward a certain complexity of both social and economic structures.

Keywords: Media, Nush-i Jan, Median economy, money before coinage, silver hoard

The treasure discussed in the present paper was found during the 1967 season of the excavations led by David Stronach on behalf of the British Institute of Persian Studies at Nush-i Jan¹. Following his preliminary description of this important find (Stronach 1969: 15-16), two major studies have been devoted to the treasure. In 1971 A. D. H. Bivar presented his still authoritative study of the hoard (Bivar 1971), and in 1984, John Curtis published the small finds from the site (Curtis 1984), which gave him occasion to reassess some of the conclusions reached by Bivar.

Fortunately, the most essential points are well agreed. Whether the treasure is “a hoard of ingot-currency” as Bivar’s title suggests, or a “miscellaneous collection of silver which would have had a considerable value as currency” (Curtis 1984: 20) the outcome is the same: this significant find

¹ This contribution reproduces a number of arguments presented in a lecture entitled “From Eretria to Nush-i Jan. Money before Coinage in the Ancient Near East and the Eastern Mediterranean”, delivered at the University of California at Berkeley, on March 30, 2005. I am much indebted to David Stronach for the invitation, for the warm welcome, and for his comments on the first draft of these lines.

represents money, hidden for future recovery². This is a conclusion of considerable importance, and Bivar, followed by Curtis, was certainly right when he had rejected the in those days very popular “silversmiths” explanation³. Moreover, his conclusion is especially interesting in view of the general lack of written sources for the Medes, and because of the limited nature of our current archaeological evidence⁴. This is what makes this hoard our only direct testimony concerning the use of money, and more generally, of a society that needed, and used, money in Media around 600 B. C.⁵. Since this testimony is of some importance for any historical reconstruction, it may be useful to reconsider here some of the conclusions that were put forward decades ago in order to enlarge on the use of money at Nush-i Jan, and to offer some new perspectives.

In spite of my basic agreement with the general understanding of the hoard by both Bivar and Curtis, I would like to challenge some of their conclusions that I consider controversial. These include in the first place Bivar’s claim that the ‘Hacksilber’ pieces in the hoard were cut according to a definite standard, in his view the Babylonian standard of 8.33 grams. If this could be proven, we would have to conclude that around 600 B. C., that is before the start of coinage in Greece and perhaps also in Lydia, there was a

² This is not the place to enter into the discussion whether or not hoards containing broken silver pieces can be labeled monetary or not, a topic heavily discussed recently between Kletter (2003 and 2004) and Gitin and Golani (2004). In any case, I agree with both Curtis and Bivar (and with Stronach’s latest understanding of the hoard, see below) that the concept of a “silversmith hoard”, still used for this hoard by Aruz (2003: 244), is certainly an inappropriate one. See next note also.

³ Bivar 1971: 97-98; Curtis 1984: 16-18. The theory of a silversmith is nevertheless ineradicable, see e.g. the description of the Shiloh hoard both by B. Brandl (in: Finkelstein 1993: 257) and B. Sass (in Finkelstein 1993: 268), or the Ebla hoard by Matthiae (et al. eds. 1995: 430).

⁴ Well summarized in Stronach 2003: 233-48.

⁵ This date was advanced by D. Stronach (re-stated in Stronach 2003: 246) and has since been accepted by all commentators except Curtis (2005). In spite of Curtis’ lower dating I follow that of the excavator, which will be maintained in the forthcoming final report by D. Stronach and M. Roaf, *Nush-i Jan I. The Main Buildings of the Median Settlement*, London, British Institute of Persian Studies (oral communication from David Stronach).

I shall deliberately avoid the term Median Empire throughout this paper because it has been seriously challenged in the last decade (lastly by Rollinger 2005). Nevertheless, I agree with the arguments of Stronach (2003: esp. p. 233) that some kind of “viable Median political entity” must have existed in the Median homeland, for which I hope the present paper shall adduce some arguments from an economic point of view. The topic will be elaborated more in details in a forthcoming paper.

move in Media towards the creation of some kind of pre-coinage. This would be quite surprising, and in any case, we have no testimony for this in Babylonia, the standard of which region was allegedly in mind when the silver pieces in the hoard were cut to meet certain expectations. Moreover, this would point to a more developed use of money in Media than in Babylonia⁶.

Bivar's interpretation is based on his frequency-table (Bivar 1971: 106, Fig. 2), which is unconvincing. Although Curtis, using statistical analyses as well, refuted it, in my view persuasively⁷, Bivar's understanding of the evidence has had, and still has, considerable influence on scholarship⁸. Therefore, I would like to stress here that none of the some thirty known hoards from Mesopotamia, or the greater number, known from elsewhere, including those from the Eastern Mediterranean, seem to me to support

⁶ At least if one accepts the categories established long ago by Seltman (1955: 1), and still referred to in the literature (e.g. Curtis 1984: 17; Thompson 2003: 87; Kletter 2004: 208): "Metal when used to facilitate exchange of goods is currency; currency when used according to specific weight-standards is money; money stamped with a device is coin. Metal intrinsically valuable, weight deliberately adjusted, the mark or device of a responsible authority, all three needed to make a coin". My guess is that this definition motivated Bivar to single out those pieces in the hoard that could have been cut to a particular standard. I believe, however, that this rigid distinction between currency and money is now in need of revision, and money should be defined much broadly, e.g. as "anything that is widely used for making payments and accounting for debts and credits" (G. Davies, cited by Schaps 2004: 4).

⁷ Curtis 1984: 19-20 and Fig. 22 (a, b) and 23.

⁸ Both Price and Waggoner (1975: 115-16) and Rynearson (1981/82: 72-73) suggested, the former two authors with explicit reference to Bivar, that the ingots in the Asyut hoard were cut according to the (Babylonian) shekel "range". Whether one accepts these arguments or not, it would be surprising to find in Egypt the shekel, and not the kite "range". When studying the Black Sea hoard, Kraay and Moorey (1981: 10-11) explicitly referred to Bivar's conclusion that the weights of the fragments are unlikely to be wholly random. If I understand Moorey (1994: 237) correctly, he followed Bivar's understanding of the evidence even after the publication of Curtis' (1984) paper. It has been suggested (in Williams 1997: 21) that "the weight of some of the individual ingots of gold and silver [in the Amarna treasure in Egypt, Pendlebury 1931] seem to approximate to multiples and fractions of the deben", but the weights published do not support such a conclusion. Bivar's arguments have recently been accepted by Vleeming (1991: 88, n. 71), Gitin and Golani (2001: 39), Thompson (2003: 68, and, if I understand her correctly, at p. 71 as well), and Schaps (2004: 233). However, Thompson's reference (2003: 68) to "pre-weighed, unmarked ingots" at Nush-i Jan is unlikely to be correct. The point is not so much that "the ancients were rarely as precise as we would like them to have been when they weighed out precious metals" (Thompson 2003: 92) but that the objects only approximated the standard because they were later weighed as precisely as the balance and weights at their disposal allowed.

Bivar's claim that cutting silver ingots to standards was ever an option to anybody at any time during more than two millennia. This is not to say that there were no standards used in monetary transactions. On the contrary, I firmly believe that one of the many possible uses of money all over the Ancient Near East included the use of cut silver pieces in pre-weighed and stamped "money bags" — that were prepared according to standards (but the individual silver pieces were never cut!) — a custom that can be shown to have been known in Mesopotamia⁹, present day Israel¹⁰, and Egypt as well¹¹. However, there are no signs of this, let us say coin-like use of money, at Nush-i Jan.

A second point of disagreement is the value, that is the purchasing power, of the buried money. Bivar did not consider this question, while Curtis concluded that the weight of the "miscellaneous collection of silver", which he considered to be a little above 1.4 kg., "would have had a value equivalent to about 59 sheep" (Curtis 1984: 20). I have problems with both the conclusion and the way it was reached. Though both Curtis (1984: 10 and 16) and Bivar (1971: 100) were well aware of the difficulties of establishing a clear distinction between jewelry and money (currency), they shared the view that only part of the hoard could be considered to be monetary, and the more elaborate items (especially the double spiral pendants and quadruple spiral beads) were pieces of jewelry. However, considering the numerous broken *and* complete pieces of jewelry in other hoards¹², textual references to jewelry made according to

⁹ The only known example is the Larsa hoard (Arnaud, Calvet, Huot 1979). For the wrapping see Thompson's comments (2003: 80, n. 21). For textual references to money bags, see Vargyas 2005.

¹⁰ The earliest example is the unpublished 1938 hoard from Ajjul (on display at the Israel Museum, probably 16th cent. B. C.), while the best example by far is that from the Dor hoard (Stern 2001). For an overview of all presently known first millennium Cisjordan hoards see Thompson (2003) and Kletter (2003).

¹¹ Noeske 1991, and 1993.

¹² The examples are too numerous to be mentioned individually, but I would like to mention the Shiloh hoard. That particular treasure contained mostly broken silver jewelry (on the floor of room 1527 in Area F, see Finkelstein [1993: 62] and Fig. 9.12 in Finkelstein 1993: 244; not all the items are shown on the photo). Although most of the hoard seems to have been found together (1993: 38), and the silver items were originally wrapped in textiles (Brandl in Finkelstein 1993: 238), the "best" pieces (pendants and toggle pins) were treated under the heading "Silver Jewellery" by Brandl (in Finkelstein 1993: 243-45), much like the double spiral pendants and quadruple spiral beads at Nush-i Jan, while the total number of silver pieces and their weight remained unrecorded.

standards and used as money¹³, and most specifically the testimony of the Larsa hoard where we have textual references to the jewelry found in the hoard¹⁴, it must be clear that the distinction they made between objects of personal adornment and monetary items is an artificial one. Accordingly, the total weight of the money has to be raised to at about 1.6 kg of silver¹⁵. Taken by itself, the approximately 200 grams of difference between Curtis' calculation and my estimate is one of only minor importance. The difference is much bigger, however, between our respective evaluations of the purchasing power of this silver. Curtis' calculation is based on data derived from the Persepolis treasury tablets, mine on Mesopotamian prices. Though arguments based on the former have the advantage of using Iranian data for purposes of comparison, they are not unproblematic for at least two reasons. They derive, as Curtis (1984: 20) correctly acknowledged, from a time at least a century later than the date of the deposition of the hoard, and, more importantly, this century witnessed a sharp rise in prices the causes of which are poorly known. Moreover, expressing the value of the hidden money in terms of sheep might be misleading as it suggests a pastoral milieu where not much money is used¹⁶. I would therefore refer to contemporary Mesopotamian parallels which imply a purchasing power approximately three times higher than

¹³ Here again, the references are too numerous to be cited, the best known is nevertheless the story of Abraham, referred to below and in n. 35, which has often been cited (including Curtis 1984: 10 and Thompson 1999: 48-49) in this context, at least since Ridgeway (1889: 90-91).

¹⁴ Whether complete and elaborate (Arnaud, Calvet & Huot 1979: Pl. II, nos. 76.91 and 76.20) or broken jewelry (*ibid.*, Figs. 70-73), scrap silver (*ibid.* Fig. 45) or re-melted pieces (76.78, *ibid.*, Pl. II, no. 4. and possibly 76.95 as well; see also p. 41), they all were mixed and put in pre-weighed bags into the jar, with their contents described on the accompanying bullae simply as silver. Moreover, the contents of the bags were summarized as silver of a definite weight (half a mina, 4 shekels and 1/6) on the accompanying tablet (Arnaud, Calvet & Huot 1979: 17).

¹⁵ This is unfortunately not more than an educated guess. The total weight of the hoard (either before or after cleaning) has not been published. Bivar gave the weight of the objects he considered as monetary, but not that of the jewelry. Though most of the latter were published by Curtis, he did not have access to the material, and in some cases had no data at his disposal. My calculation is thus an approximation only, based on comparisons with objects of known weights in the hoard.

¹⁶ This impression is even strengthened by Curtis reference (1984: 20, n. 18) to present-day Iranian rural conditions (when he refers to comparisons that can be made with the "impoverished squatter settlement" at Nush-i Jan).

the one suggested by Curtis¹⁷. Converting 1.6 kg into Mesopotamian shekels of 8.33 grams results in 192 shekels. Given the age-old equivalence between one shekel of silver and a monthly wage (and one *kurru*, — in this period 180 liters — of barley) which was still valid when the hoard was buried, we can calculate that the silver hidden at Nush-i Jan was equivalent of 192 months of labor, or put in another way, it represented the salary of an adult person for 16 years.

Whether this represents a modest sum (Curtis 1984: 20) or a considerable fortune is a matter of personal judgment, and it is connected with the question of to whom the hoard once belonged. I believe that for a private person it was certainly a fortune, and even for a temple it was not a negligible sum. Unfortunately, as in nearly all cases of hidden treasures, we have no indication concerning the identity of the owner. Bivar understandably did not take up this problem, while Curtis could not choose between two possible scenarios: a private person of the impoverished site or the temple — though he clearly, and in my view correctly, favored the latter solution (Curtis 1984: 20-21). Both conclusions are of course possible. However, David Stronach put forward another explanation, which accommodates the two and has much to be said for it. In fact, in his preliminary study (Stronach 1969: 15) he pointed out that the hoard was found on the floor, an important observation that has been overlooked in the following discussions. Both Bivar (1971: 97) and Curtis (1984: 1) claimed that the hoard was found buried *below* floor level (as are practically all hoards of this kind)¹⁸, and, in fact, the published photo appears to support such a claim¹⁹. However, the bronze bowl that contained the treasure was *on* the floor, though placed between fallen debris, and just covered with a broken brick²⁰. To find a considerable amount of silver on the floor is, if not unique²¹, nevertheless very unusual and needs explanation. If the treasure, whether private property or that of the temple, was hidden in the face of a hostile attack²², it is unlikely that

¹⁷ Based on the average price of sheep (1 shekel per sheep), the hoard would buy 192 sheep contrasted with the 59 calculated by Curtis.

¹⁸ They were followed by all later commentators, e.g. Gitin and Golani (2001: 39).

¹⁹ Illustrated in Curtis 1984, Pl. 1.

²⁰ This was re-stated e.g. in Stronach 1985: 834.

²¹ Similar rare examples include e.g. the Shiloh hoard (n. 12 above), and the Ekron hoard no. 2 (Gitin and Golani 2001: 31).

²² This is the obvious explanation for such hoards, and in fact this was the scenario suggested by Curtis (1984: 10) for Nush-i Jan as well.

somebody on the mound with a view of the valley had no time to excavate a shallow pit, a work that hardly would have needed more than a few minutes. This favors the scenario, referred to by Stronach, of an official hiding the sum at a time when the process of filling large parts of the site with either stone or brick was suddenly interrupted²³. While we will never know for sure that this was the case, this is the explanation retained here, though the ones suggested earlier remain equally possible.

Two further points of lesser importance also call for comment. The first is Bivar's classification of the bars found on ancient Near Eastern sites in general as straight bars (exemplified by the bars found at Nush-i Jan) and as cake-ingots, the latter allegedly absent in the territories to the East of Egypt and Syria (exemplified by the round ingots of Bar-Rakib, ruler of Sam'al/Zincirli). With the material that is now available, more than thirty years after Bivar (1971: 100-101) made his observations, we can reconsider this classification. I believe that the difference between cake-ingots and straight bars is not spatial, as he suggested, but functional. Bars were just one of the many forms in which precious metals were exported from territories with metal deposits. All these objects were made to conform roughly to the weight standards that obtained in the producing territory²⁴. It comes as no surprise, therefore, to find that some of the complete bars at Nush-i Jan, unlike the cut pieces, show some striking correlations (Curtis 1984: 20). In general terms, however, the original weights and forms of such imported objects notwithstanding²⁵, all soon became broken into pieces when they begun to circulate in the internal economic circuit. The reason is that during the process of weighing on the balance the intact items were adjusted to the required purchase prices from transaction to transaction, ending usually in minute pieces around and even well below the weight of one gram. This is the kind of silver normally found in excavations of any period starting, in Mesopotamia, in the Akkadian period (c. 2300 B. C.)²⁶. Consequently, when

²³ He made this point in his introduction to my lecture, referred to in n. 1 above. See also his forthcoming explanation in the Final Report, mentioned in n. 5 above.

²⁴ Since Iran is one of the rare places in the ancient Near East where silver ores are found, the silver could have come from local resources (though without lead isotope analyses this cannot be proven). If this was the case, the weights of the complete pieces would shed light on the local, Iranian weight standard (or standards).

²⁵ Whether bracelets, rings, earrings, coils, cups, or just sheet, wires etc.

²⁶ Accordingly, Bivar's suggestion (1971: 102), that bars were restricted to "the territory of the former Median empire" while cut silver pieces were accepted throughout the Achaemenid realm, is certainly wrong.

royal or temple treasuries (the institutions that usually put intact silver pieces into circulation) received these small broken pieces back as donations or taxes, they had to find a convenient way to store them. The best description of this method can be found in a story of Herodotus (3, 96), who describes the way the Great King stockpiled his treasures²⁷. This is the way we have to visualize the preparation of the cake-ingots, the forms of which derive from the small vessels in which they were melted²⁸. Therefore, according to this testimony at least, there were cake ingots in the East as well²⁹. And there were of course bars, including straight bars as well, in the West, in Egypt³⁰, Levant³¹ and Asia Minor³². What is important in the case of cake-ingots is not their form, but their function. At least some of them seem to be re-melted ingots, made from scrap silver, although I have only been able to study a small percentage of the known corpus so far³³. Nevertheless, at least in some

²⁷ “The king hoards this tax in the following manner: having melted (or ‘smelted’) it in earthen vessels he refines it; having filled (or impregnated?) the vessel, he afterwards removes the crucible (or perhaps specifically the tight-fitting clay lid of the cementation vessel?); and, when he needs money, he mints as much as is required on each occasion”, cited in the translation of A. Zournatzi (2000: 255). See also the similar description in Strabo 15, 3, 21.

²⁸ For a photo of cake ingots of customary size (the ones from Sam’al are exceptionally large), see e.g. nos. 869 and 872 in Price and Waggoner, Plate XXXI. For a suggestion that the cake ingots and Herodotus’ description deserve to be related, see Thompson 1999: 50.

²⁹ None of such cake ingots may have survived because Alexander probably took the opportunity to mint coins from them.

³⁰ The best-known examples are from the Amarna-treasure (Pendlebury 1931), an oft-illustrated collection, e.g. in Williams 1997: 21 or in Schaps 2004: 50. For a refutation of Pendlebury’s contention that a thief broke up the silver objects in question (in order to make them unrecognizable), see Vargyas 2002.

³¹ A large hoard of bars from the end of the third millennium (though made of copper, not silver) from Har-Yeruham [Negev] was published by Kokhavi (1969); a silver bar was seen in about 1970 in the bazaars of Jerusalem by Meshorer (personal communication; unfortunately it was sold before the Israel Museum could acquire it).

³² The best-known examples are, of course, those from Troy (Schliemann 1880: 470). Those have been recently characterized as “six silver ingots, now in the Hermitage, if not exactly Homeric “talents”, as Schliemann thought, may well have had similar function. In pre-monetary societies, precious metals, especially silver, often served as money” (Traill 1999: 21).

³³ Curtis (1984: 12) suggested the opposite procedure: the cake ingots were the primary ingots, and the bars were derived from secondary castings of these bun or cake-shaped ingots or of scrap silver. As neither Curtis (1984: 12) nor I have had access to the objects themselves, the question cannot be resolved definitively. My scenario is based on certain objects, both published and unpublished, to which I have had access in the Egyptian

cases the intruding small pieces are still observable on the surface³⁴. If a bigger sample were available to support such a suggestion, cake ingots might provide the best proof not only for the use of money at a given place, but also, more importantly, for its circulation within the economy. In other words, cake-ingots might be used to show that a given economy was monetized. The lack of such re-melted items at Nush-i Jan is thus an important indicator of the level of economic life at the site³⁵.

The final point I might comment on is the age of the double spiral pendants and quadruple spiral beads. Both Bivar and Curtis considered them as jewelry and excluded them from the monetary context. Bivar did not study them at all, while Curtis, based on parallels from all over the ancient Near East, suggested a late third, or early second millennium context for them³⁶. To explain the great time span between the pendants and the beads on the one hand, and the rest of the objects on the other (which all appear to belong to the early or middle first millennium), he suggested that the former may have been found in ancient graves (1984: 3; 2005: 234).

Curtis' point, based on art historical and technical observations, is amply documented and well argued. My hesitation to accept it comes from my different understanding of the nature of ancient money. Hoard evidence points toward a different conception of money from ours. Our predilection for jewelry as pieces of art is culturally determined, a preference not shared by the inhabitants of the ancient Near East. In a society where no distinction was made between the use of precious metals for money and their use in jewelry, people bought jewelry as an investment in capital, the value of

Museum at Cairo. This is not to deny, of course, that the cupellation process produces cake ingots as primary ingots (see e.g. Rihl 2001: 122-26). My point is that the ingots called "cake ingots" by Bivar (e.g. those from Sam'al/Zincirli, Bivar 1971: 100) are better understood as re-melted scraps, something first shown by Thompson (1999: 49-50): "The so-called 'cast' ingots of Barrekub....were actually made by baking gathered pieces of Hack-silber..."

³⁴ As in no. 830 of the Mit Rahineh (Memphis) hoard of five cake ingots, published (without photos) by Brugsch (1906). For more references see Thompson 1999: 50.

³⁵ From the above it also follows that Bivar's separation of the items as bars, cut-silver pieces and ring-money, and the distinct study of their weights is unlikely to shed new light on the use of money at Media. Moreover, the weights of the complete pieces (220; 100.7; 100.3; 21.8; 18.31; 13.92; 11.3; 10 and 6 grams respectively) do not in any way suggest the use of the Mesopotamian system based on the shekel of 8.33 grams.

³⁶ Though he admitted (1984: 10) that they could be of 7th century date. Later (2005: 234), however, he concluded that these items "tell us nothing about the material culture of Nush-i Jan in the Iron III period".

which lay in its metal content. The best testimony for this way of thinking can be found in the story of Abraham, who gave his servant a ring of half a shekel weight and two bracelets of ten shekels weight as gifts for his son's future bride³⁷. His attitude must have represented the way in which jewelry was generally regarded in the ancient Near East. In contrast to our own inclinations (where we might decide, in an emergency, to sell a favorite item but would surely never break it in pieces to sell just a part of it), people in the ancient Near East had a radically different approach to jewelry, exemplified in the broken pieces of the approximately two hundred monetary hoards I know of. My point is that both complete and broken jewelry could be, and in fact was, used as money. Accordingly, if the pendants and beads were really made in the late third millennium, and still used, or re-used in the first millennium, they should have been very largely worn and broken by the latter date. In fact, the incomplete pieces and fragments suggest that there were at least five more broken quadruple spiral beads in the hoard (Curtis 1984: 4), in my view a clear testimony for their use as monetary items. However, the greatest part of them, 18 pieces, were still intact when buried, and some look quite new. The easiest way to explain this is to suppose that they were prepared in the centuries, if not in the century that preceded their concealment.

There are perhaps some faint indications to support this, though I admit that I can much less underpin my position than Curtis could his³⁸. My main evidence comes from a modest imprint of a scarab or stamp that left a scroll pattern on a lump of clay, found in the south-east corner of the ramp (Room 40) in the Fort³⁹. Curtis (1984: 25) was surprised to find it at the site because this pattern usually belongs to an earlier context. This was even more surprising because all the other stamps and imprints of stamps found at Nush-i Jan can be securely dated to the middle years of the first millennium⁴⁰. We are thus faced with the same problem as with the double spiral pendants and quadruple spiral beads. Although it is not easy to understand the function of the seal impression on that particular lump of clay, there is another, very similar lump, which is stamped all over with the a stamp, though the imprints are unfortunately

³⁷ Gen. 24, 22, see also n. 13 above.

³⁸ His interpretation as heirloom has been widely accepted, lastly by Aruz 2003: 244.

³⁹ No. 237 in Fig. 4 in Curtis 1984.

⁴⁰ See nos. 233-36 in Fig. 4 and Curtis' comments at p. 25.

blurred⁴¹. It is of importance, however, that in the latter case, the imprints of a string are clearly visible near to the imprints of the stamps. Therefore, I would not exclude the possibility that it was once used as a *bulla* on a jar or on some other object, including a door, with the clay fixing the two ends of a string, and with the impression being made by a responsible official. I would suggest that the lump that exhibits the scroll pattern was used for the same purpose, a proposal that finds further support in the numerous fingerprint imprints found on both lumps (Curtis 1984: 25)⁴².

If the above line of reasoning is accepted, the scroll pattern was imprinted with the seal of a clerk of the temple, and consequently, its style is more or less contemporaneous with the hoard. The suggestion that this pattern remained in use in the first millennium is corroborated by a similar example on the bulla of the Dor hoard, dated to the 10th century⁴³. As an explanation, one can recall that this pattern was very popular in the Mitannian kingdom in general, and on Nuzi seal impressions in particular⁴⁴, and that the latter site is not so very far from the later Median site at Nush-i Jan. In any case, if we exclude the case of re-used Nuzi seals, found again in graves, it is likely that a long-surviving artistic tradition produced the seal imprint that occurs on the lump of clay discussed above⁴⁵.

However, the scroll pattern is as old as the double and quadruple spirals beads, and both belong to the same repertoire. They are often used together at the same place, as in Mycenae for example⁴⁶. Consequently, if we find them together at Nush-i Jan, and the scroll pattern can be shown to have belonged the first millennium, there is no compelling reason for the conclusion that the pendants and the beads should belong to a much earlier context⁴⁷.

⁴¹ No. 238, Fig. 4 and Pl. XII.

⁴² See also the similar arguments presented by Boucharlat (2005: 482-83).

⁴³ See Fig. 1.2 in Stern 2001: 23. I have to admit, that the excavator, basing his opinion on a report by D. Ben-Tor, suggested that the seal had belonged to the mid-second millennium, but this conclusion can now perhaps be challenged.

⁴⁴ Porada 1947: nos. 26, 35-37, 60, 62-64, 95, 100-102, 105, 110-12, 114, 118, 123, 152, 184, 215, 218, 267, 272-75, 297, 299, 301, 316, 330, 353, 361, 395, 398, 558, 643, 648-51, 676, 743-44, 760, 795, 798, 852, 856, 897, 917, 921, 941.

⁴⁵ For the seals in general see now Maras 2005.

⁴⁶ This is striking even if the quadruple spirals found in Greece, including the ones from Mycenae, were not manufactured in the same way as the Near Eastern ones (Curtis 1984: 5, n. 4).

⁴⁷ All the less so if, in fact, quadruple spiral beads are known from early first millennium contexts at Hasanlu (and even if one makes them, with Curtis 1984: 5, to belong to Hasanlu V, dated 1350-1000), and perhaps at Ziwiye as well (but note the doubts expressed by Curtis 1984: 6)).

Whether or not the above suggestion holds true, my conclusion is that the whole of the silver hoard found at Nush-i Jan represents money, and that, at least in some parts of Media, the use of money must have been known and practiced as early as around 600 B. C. Nevertheless, this use, such as can be reconstructed from this one attested hoard, was quite rudimentary. This argument is not based exclusively on my refutation of the thesis that the pieces were cut according to the Babylonian standard. What is of importance, is the relatively high number of complete items and the lack of the elsewhere recurrent small pieces. These observations point towards an underdeveloped monetary system⁴⁸. Moreover, there are no indications of the re-melting of scraps (the so called cake-ingots) or of a pre-weighing of the silver (in that there were no associated textile remains). All of this probably can be explained by the fact that the hoard belongs to an early phase of the use of money in Media, which could have been promoted by contacts with, and by the requirements of, the Assyrian Empire. In any case, Median society seems to have been able to adapt to the use of money; and if I am right in my conclusion that the clay lumps discussed above were bullae, also to the Near Eastern way of registering accumulated incomes. This would point toward a certain complexity of both social and economic structures. It is nevertheless clear that these conclusions are necessarily provisional, and any new discoveries might substantially change the picture.

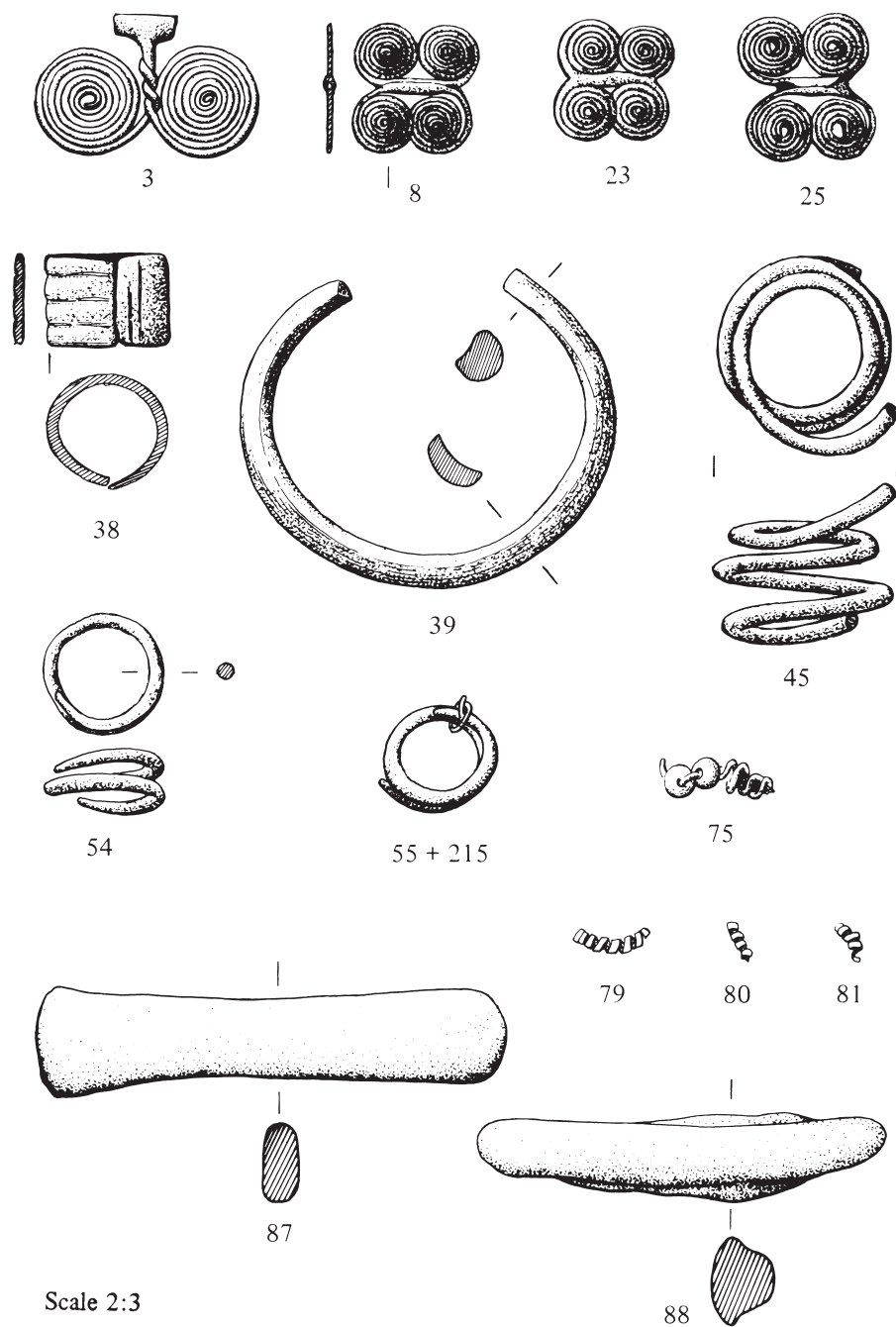
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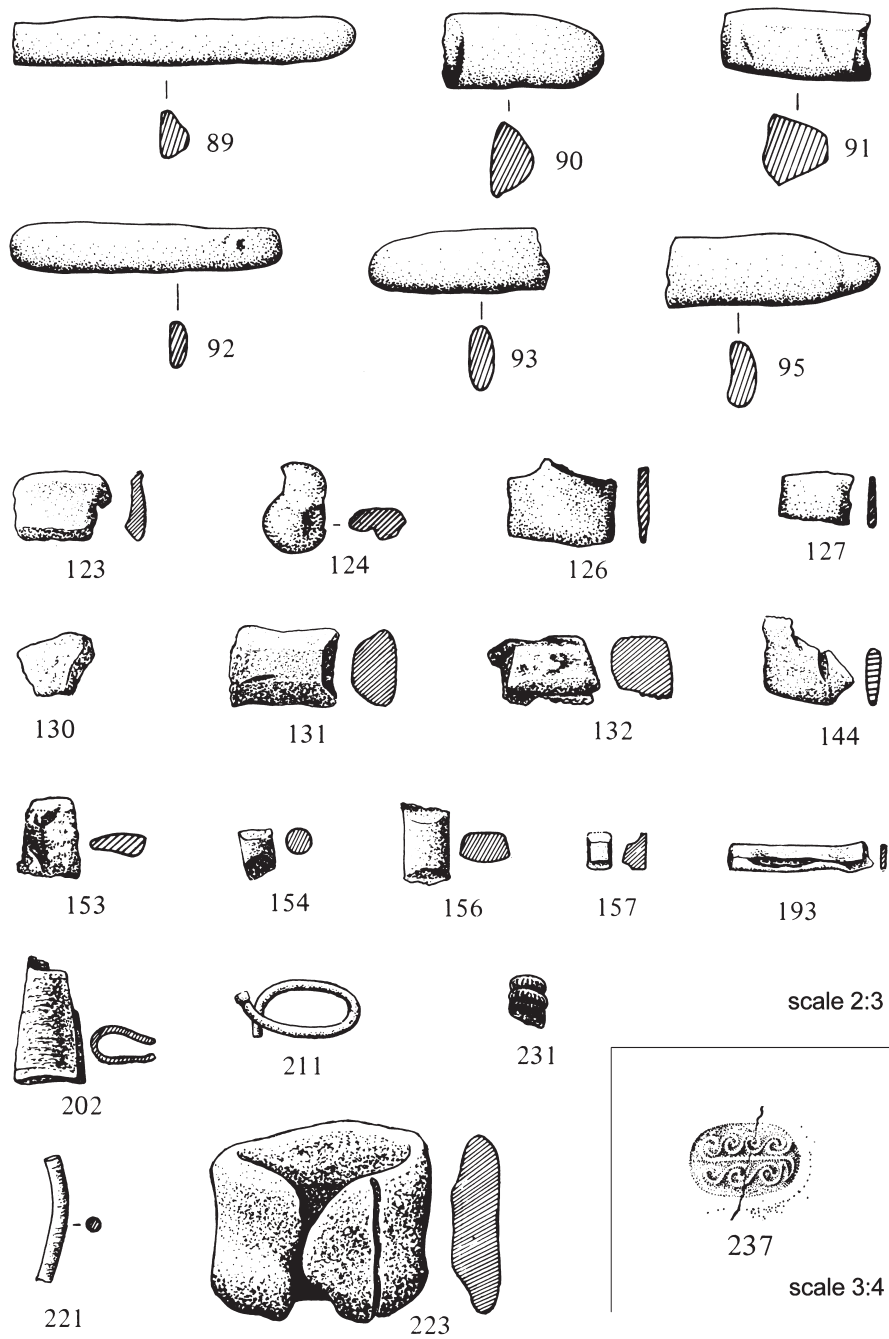
⁴⁸ Only the possible presence of some "pre-portioned pieces" in the hoard (for this use of silver in general, and at Nush-i Jan in particular, see Thompson 2003: 71-74, see also Thompson 1999: 48) could be interpreted as signs of a more sophisticated money use, but the evidence is not straightforward. Based on the photos, B 2, 7, 18 and 25 in Bivar's Pl. II (= Curtis' nos. 143, 107, 156, 194 in Pls. VIII-IX) might have been cut from such pre-marked "chocolate" bars, a number which is not too high compared to the 231 pieces (Curtis 1984: 1) in the hoard.

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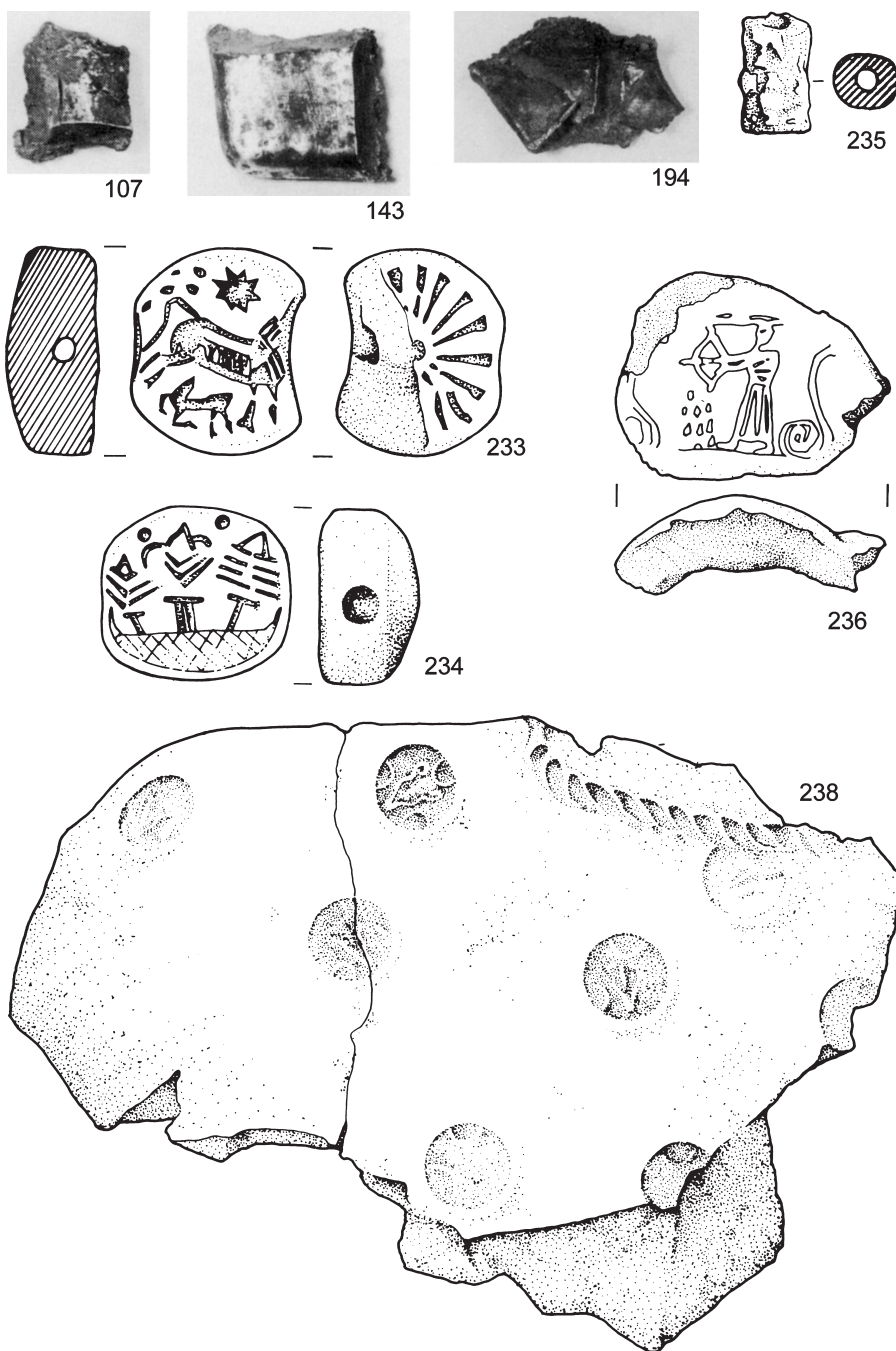
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Pl. 1.



Pl. 2.



Pl. 3.

A NEW PERSPECTIVE ON DAMBAKOH SITE IN SOUTHEAST IRAN

BY

Hassan BASAFA*

(Tarbiat Modares University, Tehran, Iran)

Abstract: Dambakoh site is situated in Chabahar district, at 2 km. from the village Balure-machi. According to the archeological evidence, including potsherds, architectural remains, clay furnaces and numerous graves, the Dambakoh site is 1300 m. long in SE direction and 700 m. wide. The highest point is at 70 m. above plain level. At first glance it can be divided into three distinct areas, i.e. residential, industrial and burial sections. Some 2500 to 3000 graves cover the majority of the site. Most information about this site is based on the efforts of Aurel Stein in 1932. He excavated 42 graves and attributed them to the Parthian period. During a survey in the vicinity of Chabahar in 2001, potsherds were collected randomly and are presented here.

Keywords: Dambakoh, Londo ware, Namord ware, southeastern Iran, Parthian period, Sassanian period.

Introduction

Due to the absence of sufficient documentation the archaeology of SE-Iran in the historical periods remains badly known (Haerinck 1983). However, Dambakoh is one of the numerous sites in the region belonging to these periods. In 2001 a survey was undertaken in Chabahar district, under the directorship of Mr. Rohollah Shirazi, but the results remain unpublished so far. A number of potsherds were collected at the site that are presently preserved in Zahedan Museum¹ (Chabahar series, Dambakoh site). Undoubtedly, this collection can play an important role in establishing a chronology for the region.

* Post Graduate scholar, Department of Archeology, Tarbiat Modares University, P.O.Box 14115-139, Tehran, Iran

¹ This study was conducted under the supervision of Mr. Rohollah Shirazi in 2001 from Organization of Cultural Heritage and Tourism, Seistan and Baluchestan province.

Geographical location of Dambakoh

Dambakoh is situated in the rural district of Bahu Kalat at two kilometer north of a village called Balure-machi/Blormochi, in Dasteyari division of Chabahar district, in the Seistan and Baluchestan province. It lies at $25^{\circ} 32' 1/1$ southern latitude, $61^{\circ} 22' /9/3'$ western longitude and 100 m. asl. (Pl. 1). The riverbed of Kankoor or Kohenkooor (ancient river) is situated at a few hundred meters distance on the western side of the site. It is worth to mention that this is one of the ancient riverbeds of Bahu Kalat that is dried up now (Pl. 2). Dambakoh is accessed from a gravel road from Sangan village to Basot and Balure-machi/Blormochi. The area of Dambakoh is mainly covered by semi-equatorial thermophilous vegetation. The W and SW parts of the site are covered by an Islamic cemetery, not older than 300 years.

Background of archeological investigations

The site was first surveyed by Major E. Mockler who published his research in 1877 (Mockler 1877: 126). About 55 years later on the basis of his information, Aurel Stein visited the site during his journey to Baluchestan in 1932, and proceeded to a more detailed and systematic survey. Amongst the numerous graves, he excavated 42 of them containing quite a lot of burial goods.

Description of the site

With due attention to the available archeological remains including potsherds, clay furnace remains (Pl. 3) as well as architectural ruins (Pl. 4), Dambakoh enclosure is 1300 m. long in N-S direction, and 700 m. wide. It reaches a height of 70 m. above the surrounding plain level and can be divided into a residential, an industrial and a graveyard area (Pl. 2).

Cemetery

Most of Dambakoh is covered by burials (Pl. 2). According to Stein, they amount to 2000 (Stein 1937: 73). However, presently it seems that there are about 2500 to 3000 graves at the site, scattered over its northeastern (Pl. 5) and eastern (Pl. 6) parts. The large number of graves shows that

the site was used as a burial ground during a longer period. The graves are made with locally available irregular flat, black stones put in layers (Pl. 7). The size of the graves varies from squares of 1x1 m. while others are rectangular of 2x1.5 m. According to the remaining parts of the graves, the height of the walls varies between 1.10 m. and 1.50 m. (Pl. 8). Over the years the constructed tombs decayed and collapsed (Pl. 9). Some of them also show an entrance varying from 50 to 70 cm. in width. According to Stein, the date of all graves is similar and the broken pottery on the surface from the site originally did belong to the graves (Stein 1937: 75). Pottery included flasks, jars, small vats and globular vessels, some of them covered with a green glaze. No painted wares were found inside the graves (Stein 1937: 76). On the whole, graves and material can be compared to other sites studied by Stein, such as Nazir Fanuj, Hazareh Mardi, Zab in north of Baluchestan, Pakistan, Basoot at 90 km. southeast of Dambakoh in the area of Enroga (Stein 1937) and graves at Dahestan and Rameshk villages in Jeraft district (Chobak 1999: 94-95).

Residential and Industrial Zones

At the southern parts of the eastern and western slopes of the Dambakoh cemetery, there exist two residential and industrial zones (Pl. 2). According to the available evidence such as remains of four clay furnaces and pottery, there was a lot of pottery production in the industrial zone (Pl. 3 & 10). There also exist two separate projections to the industrial zone on the western side, as well as architectural remains of rooms, constructed unsystematically by layers of stones. According to the recent information the rooms measured between 3x3 m. and 3x4 m. (Pl. 11-13). Parts of them are constructed by using mud as mortar. However, most of the architecture is dry-stone built (Shirazi 2000: 40). The roof type of the rooms and the tombs as well remains unknown.

Classification of pottery

Pottery can be classified into several groups: large storage vessels, coarse kitchen/cooking ware, common ware, mortuary ware (burial ware?) as well as Londo ware, bichrome painted ware, common ridged ware, fine orange painted ware and glazed ware.

– *Large storage vessels*

These large vessels (Pl. 14 n° 1-3; Pl. 19) are usually coarse or semi-coarse and are red, orange or buff. Sherds show mineral grits (tiny or larger sand/gravel inclusions, pottery fragments and small particles of lime) mixed with rare vegetal temper. A potter's wheel has been used and some of them show a buff or red slip. Some have an everted round or flat rim. Also double rimmed vats were found having the second rim set lower than the first one. Some of the potsherds show an incised decoration or have applied and incised ridges.

– *Coarse kitchen/cooking ware*

This ware (Pl. 15) is usually red, buff, brown or orange. Mineral grits (gravel, big and small pottery fragments) and plant fibers are observed. They are handmade and usually coarse to very coarse but well fired and hard. The effects of oxidization and low temperature used for firing are clearly evidenced. The vessels have a greater variety in shapes. There are jars, plates/bowls and spouted vessels. Cooking jars can have a horizontal handle(s) attached to the rim. Vessels usually have rounded and everted rims (Pl. 20 n° 1-5). More complete and low sided plates and bowls are numerous and show a variety of dimensions (Pl. 20 n° 6-12). They mostly have flat bases. Other vessels have spouts (Pl. 20 n° 13-15).

– *Common/ordinary wares*

Common wares represent a large group (Pl. 16 n° 1-10; Pl. 21) and are red, buff, gray or orange. Most are buff to orange with a fine paste containing mineral (soft, small and big) grits and some vegetal temper. Usually they are wheel made. Adequate temperature was applied for firing and they are hard and solid. Some have an incised decoration (Pl. 21 n° 13-14). They can be classified into stands, bowls and jugs with or without neck. A fragment of a bowl with a high tulip or trumpet base shows Hellenistic influence (Pl. 21 n° 1). Bowls have usually a simple rim (Pl. 21 n° 10-12). Some of them also have a handle or lug with horizontal or vertical perforation (Pl. 22 n° 2-4). Jugs with two handles are divided into two groups: with (Pl. 22 n° 1) or without neck. Jugs with neck are found in different shapes, some of them with an everted flat rim.

– *Mortuary ware (?) / burial ware (?)*

A. Stein (1937: 70-80) found quite a lot of this ware in the tombs. They are wheel made and are usually slipped. There are jars but jugs with trefoil spouts also (Pl. 16: 11-13; Pl. 22 n° 5-7).

– *Londo ware*

This ware was found for the first time by Beatrice de Cardi in 1951 at Londo, Pakistan and thus has received this name. According to her account, less attention was paid in making these wares. They have a coarse texture due to big inclusions. Most are hand made, decorated with a black, dark brown and red or cream slip. Deep or light brown red painted designs such as circles, undulating lines, vertical triangular designs and animals, (horses and wild goats) and men (de Cardi 1951: 633-75). This pottery is found in eastern and western Makran in Pakistan and Jazmoryan (Besenval 1977). At Dambakoh (Pl. 17 n° 1-3; Pl. 23 n° 1-3) most sherds are semi-fine to semi-coarse and occasionally made by hand or by wheel with geometrical designs in black, red or brown on a buff and red slip. Designs on them include spirals, straight horizontal lines as well as wavy lines. According to the stratigraphy from Tepe Yahya (Lamberg-Karlovsky 1970: 8; Lamberg-Karlovsky & Beale 1986: 11) they can be attributed to the Seleucid-Parthian period.

– *Bichrome painted ware*

Only two fragments (Pl. 17 n° 4-5; Pl. 23 n° 4-5) of this kind were found and can be compared to examples from Rameshk cemetery (Chobak 1999: 94-95). These are wheel made, having a red slip painted with black and red designs.

– *Common ridged ware*

Distinguished marks of these wares are horizontal ridges (Pl. 17 n° 6-7; Pl. 23 n° 6-7). They are wheel made and they are mostly red or buff. Though, the firing of these potsherds was not good and their paste contains small gravel and lime particles. This pottery was found in the earliest level of Kuh Khwadjah (VI) as well as in later levels (Haerinck 1983: 217). Their production probably started during the Parthian period, but they certainly are well represented during the Sassanian period, and probably also during the Early Islamic period.

– *Namord ware (Fine orange painted ware)*

Another class of pottery found at Dambakoh archeological site is Fine orange painted ware (Pl. 18 n° 1-9; Pl. 24 n° 1-9). Mr. Sajjadi has helped to identify them as Namord Ware and dates it to the Sassanid period (Sajjadi 1989: 31-40). This ware is also present in SE-Arabia (Potts 1998). They are similar to Londo ware but finer. They are wheel made and well fired, with thin walls and a paste containing few small mineral grits. The outside is painted with black on an orange and red slip. Decoration includes inverted circles, ladders, numerous horizontal narrow parallel lines filled with wavy lines. Surfaces are smooth and are occasionally burnished.

– *Glazed Ware*

Some fragments with blue and green flaky and cracked glaze were found (Pl. 18 n° 10-13). They were attested in graves at Eshkoto and Rameshk (Chobak 1999: 94-95), at Bijanabad (Stein 1937: 142-42) as well as at Miri Ghalat (Besenval 1977: 30) in Pakistan (Eastern Makran). Stein (1937: 70-80) dates them to the Parthian and Sassanian periods. No complete shapes can be recognized at Dambakoh.

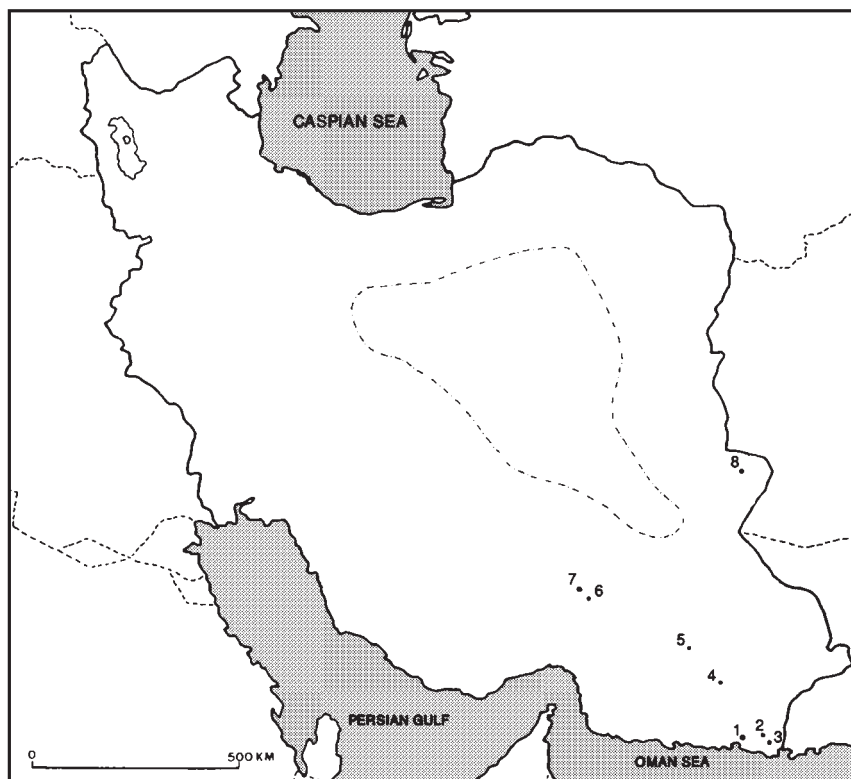
Conclusion

The extent of the site of Dambakoh and the presence of architecture, vast cemeteries and a quantity of pottery of different categories and classes highlight the importance of this site in Baluchestan and southeastern Iran during the historic period. In comparison with the evidence from levels I, IA and II at Tepe Yahya in Kerman province, the material from Dambakoh can be dated to the Seleucid, Parthian and Sassanian periods. Excavations are needed to establish a more detailed chronology.

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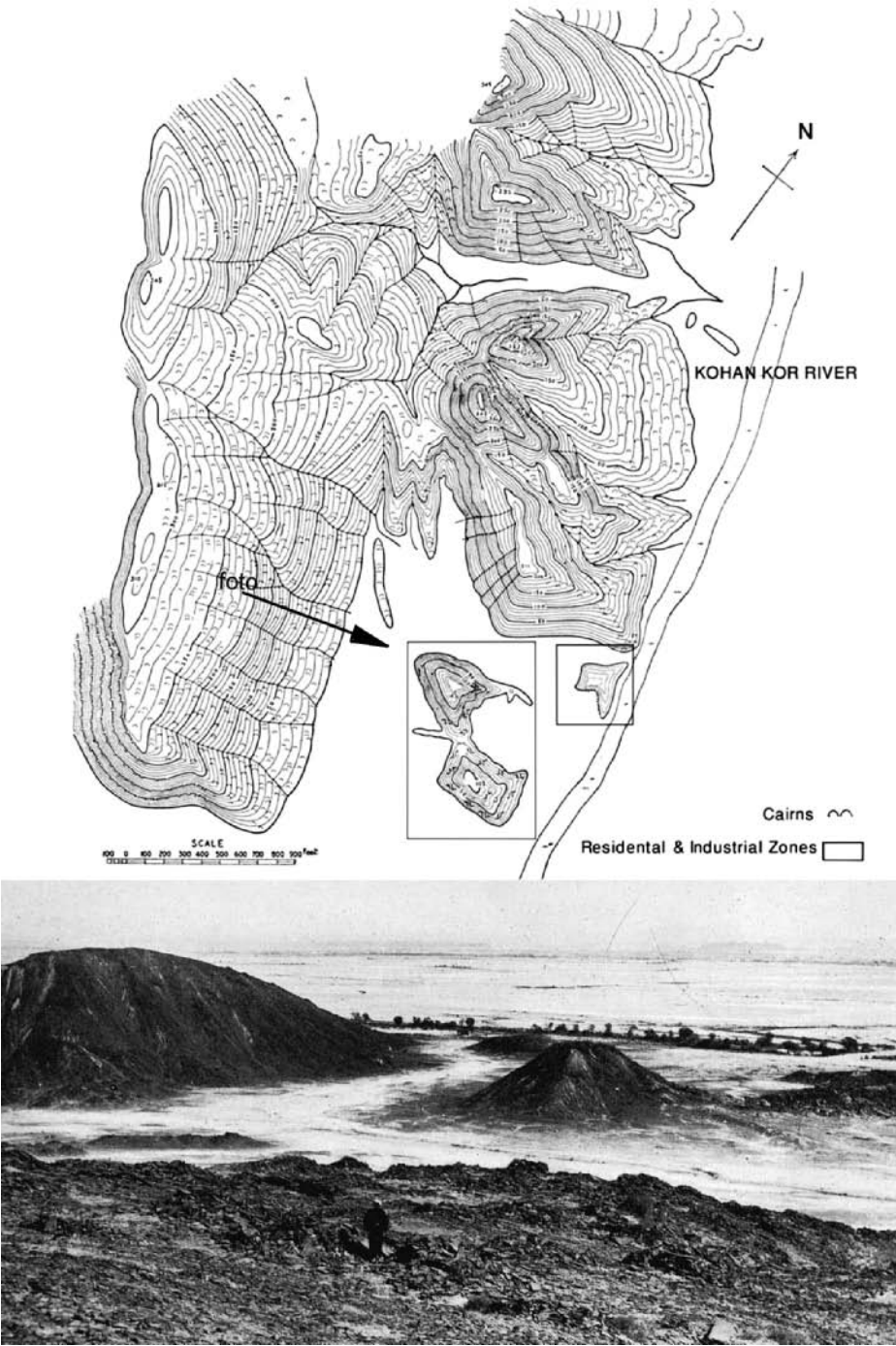
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|-------------|-----------------------|
| 1. Chabahar | 5. Hezar Mardi |
| 2. Dambakoh | 6. Dehestan & Rameshk |
| 3. Basot | 7. Tape Yahya |
| 4. Fanuch | 8. Kuh Khwadjah |

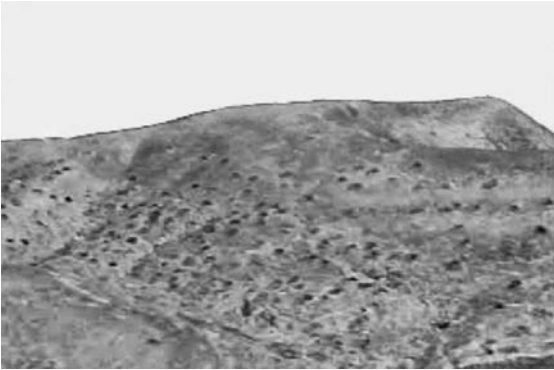
Pl. 1. geographical map of Iran with the location of archaeological sites.



Pl. 2. site plan of Dambakoh (after Stein 1937:74, plan 7 & Pl. 24).



Pl. 3. (top): clay furnace; Pl. 4. (bottom): architectural remains.



Pl. 5. (top) graves scattered over the northeastern part of the site; Pl. 6. (center) graves scattered over the eastern part of the site; Pl. 7. (bottom) grave made with locally available irregular flat, black stones put in layers.



Pl. 8. (top) remaining part of grave, the height of the walls varies between 1.10 m. and 1.50 m.; Pl. 9. (center) remaining part of the grave that over the years decayed and collapsed;
Pl. 10. (bottom) industrial zone.



Pl. 11. (top) remaining part of rooms, between 3x3 m. and 3x4 m.; Pl. 12. (center) remaining part of rooms, between 3x3 m. and 3x4 m.; Pl. 13. (bottom) remaining part of rooms, between 3x3 m. and 3x4 m.



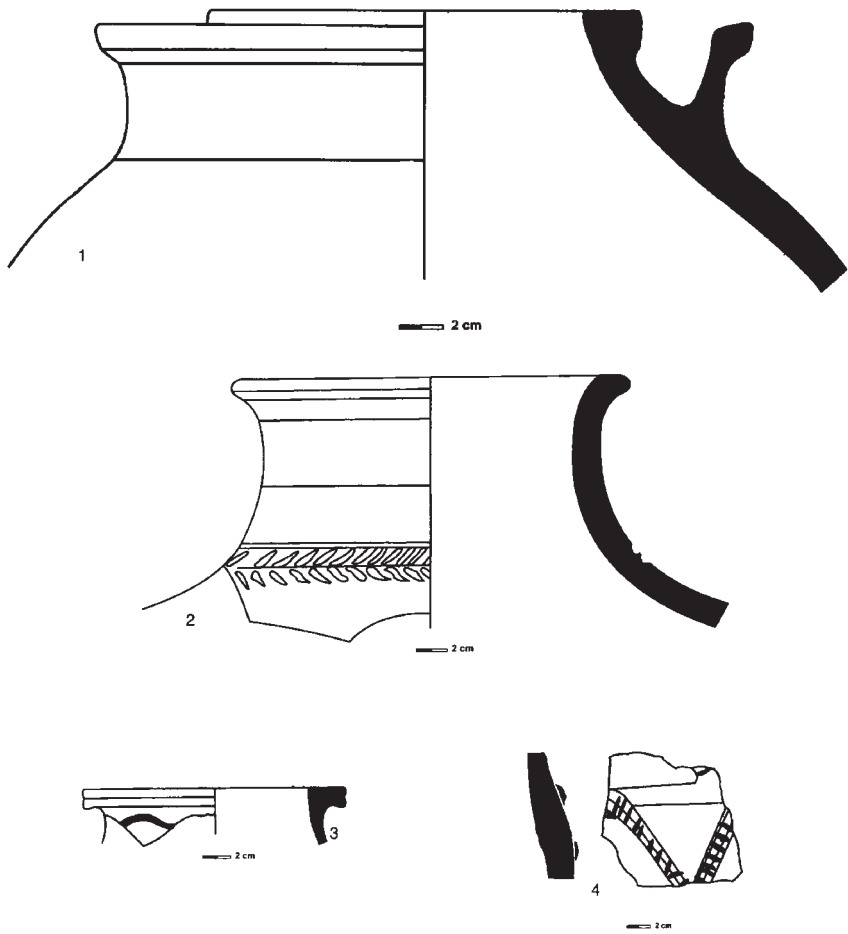
Pl. 14. (top) large storage vessels; Pl. 15. (bottom) coarse kitchen/cooking ware.



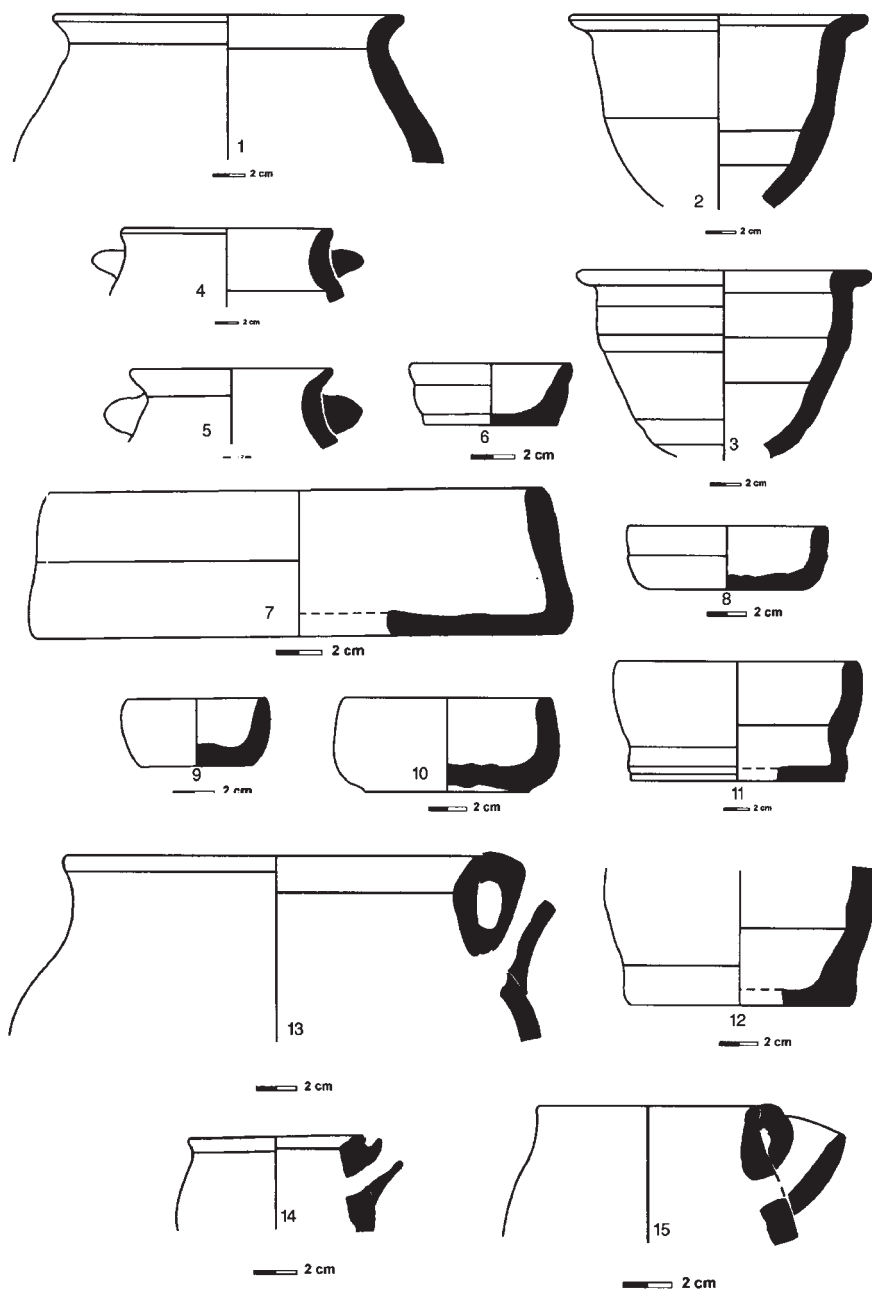
Pl. 16. 1-10: common/ordinary ware; 10-13: mortuary ware (?) (burial ware?)



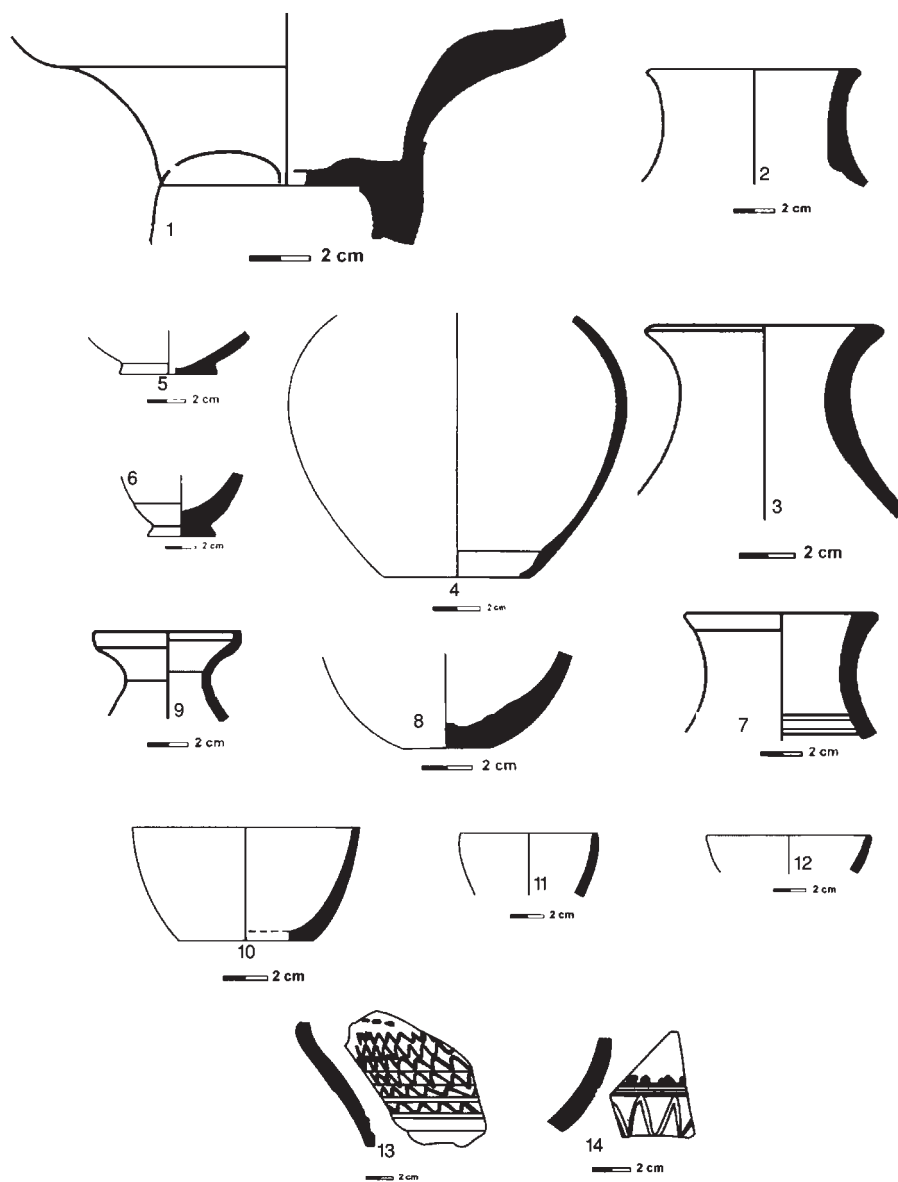
Pl. 17: 1-3: Londo ware; 4-5: bichrome painted ware; 6-7: common ridged ware;
 Pl. 18. 1-9: Namord ware; 10-13: glazed ware.



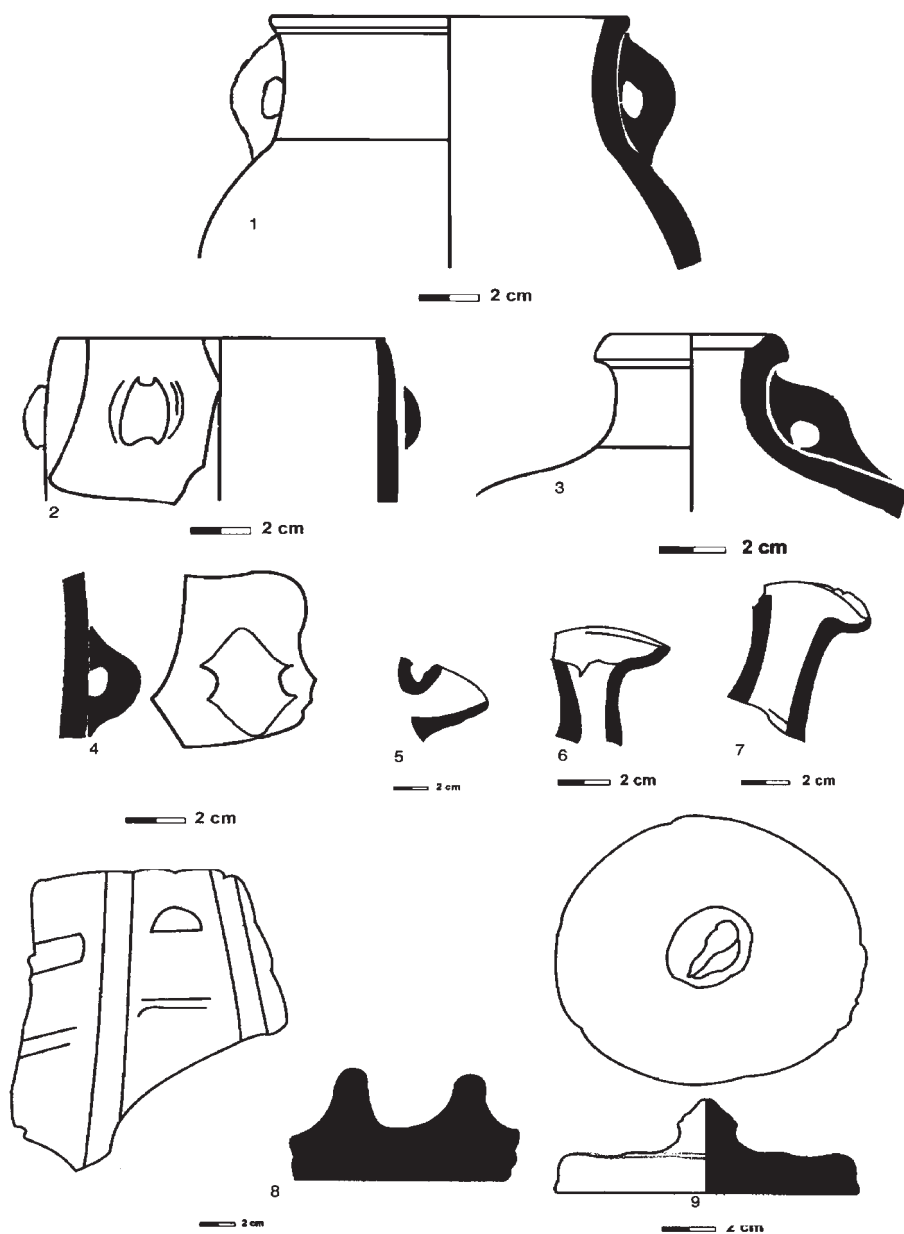
Pl. 19. large storage vessels.



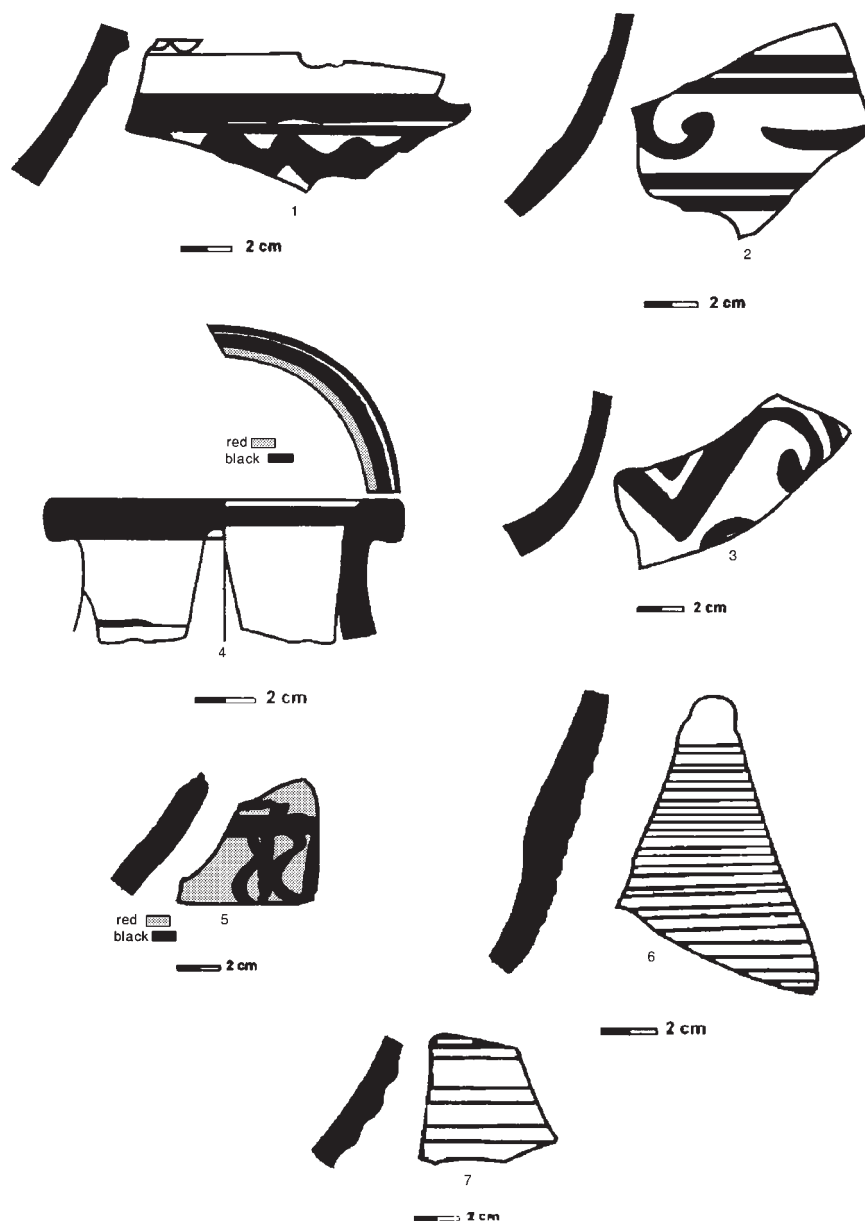
Pl. 20. coarse kitchen/cooking ware.



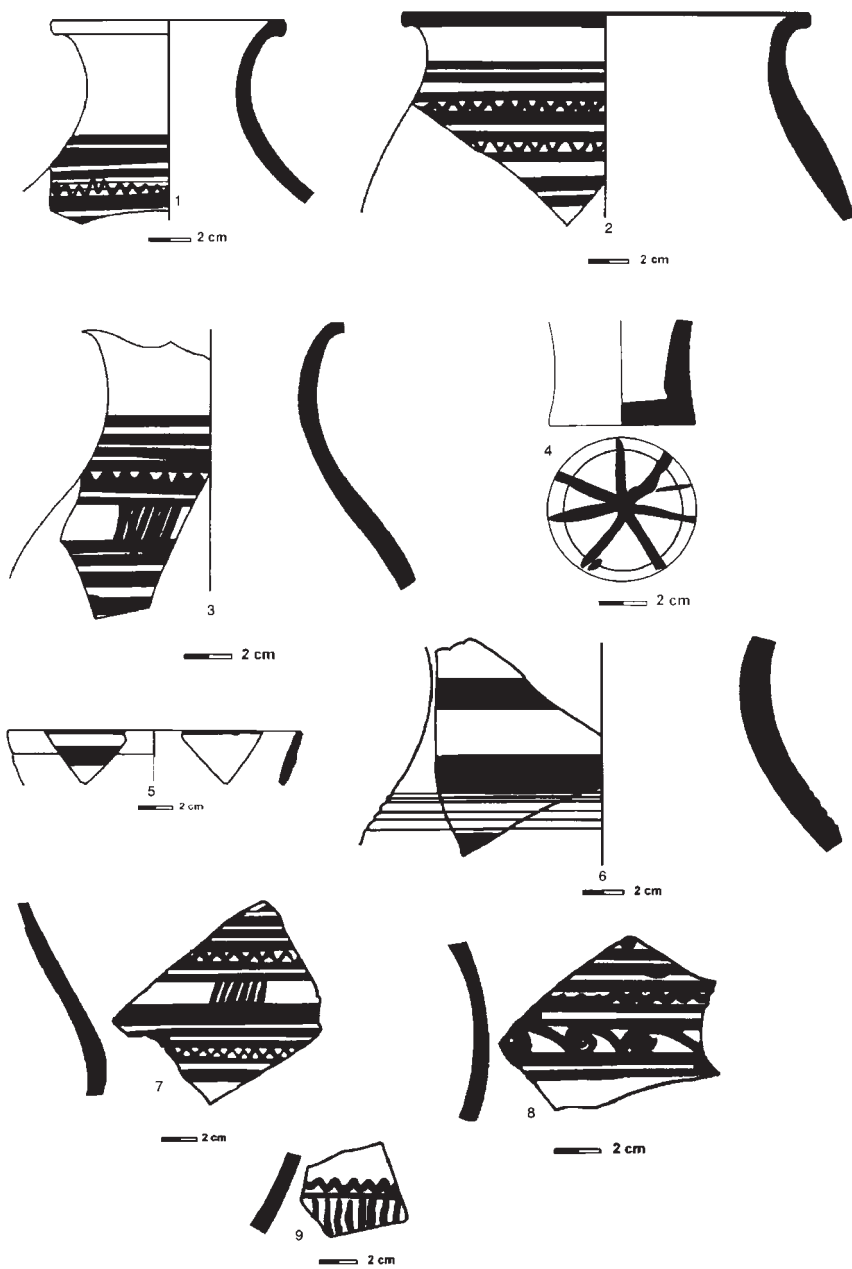
Pl. 21. common wares.



Pl. 22. 1-4: common wares; 5-7: mortuary (?) (burial ware?) ware and 8-9: unknown.



Pl. 23. 1-3: Londo ware; 4-5: bichrome painted ware; 6-7: common ridged ware.



Pl. 24. Namord ware.

ALTAR SHRINES AND FIRE ALTARS? ARCHITECTURAL REPRESENTATIONS ON *FRATARAKA* COINAGE

BY

Ernie HAERINCK* & Bruno OVERLAET**

(* Ghent University; ** Royal Museums of Art and History,
Brussels / Ghent University)

Abstract: Buildings with two doors and horn-shaped battlements figure on the reverse of early *frataraka* coins of the 1st. half of the 2nd. cent. BCE (“first phase” coins); similar buildings but with two large stepped crenellations on the corners are shown on the coins of the second phase. In a third phase fire altars were represented. Contrary to other scholars, the authors do not believe that the building shown on the early coins is closely related to the tower-like monuments at Pasargadae and Naqsh-i Rostam. It is suggested that the monument shown on the coins had a fire altar inside and that its concept is comparable to Greek and Roman sanctuaries, such as the Ara Pacis at Rome.

Keywords: S-Iran, Fars, Persis, Seleuco-Parthian period, *frataraka*, numismatics, architectural representations

In a recent paper D.T. Potts (2007) reviewed the iconography of the Persid coins of the *frataraka* dynasty. Potts evaluates the suggestions on the different possibilities of interpretations brought forward by previous authors for the building shown on the reverse of these coins. Some would see it as a fire altar, an ateshgah, a tomb, a coronation tower, a “foundation house” or a repository for Zoroastrian paraphernalia or as a tower/altar/fire altar. As several authors do, D. Potts believes that the building on the earliest *frataraka* coins is inspired by the Zindan-i Suleiman at Pasargadae and the Ka’ba-i Zardusht at Naqsh-i Rostam. Though, he suggests that the *frataraka* may not have had knowledge of what these buildings’ original function may have been. We do not share the idea that the representations on the coins are to be linked to these two monumental structures. We think there is yet another approach possible.

The genealogy and chronology of the “*frataraka*” rulers in Persis is not easy and not fully established yet. In their coin series one can recognise four major groups. For the chronology and the names of the rulers the classification of Alram (1986) is followed.

- Group A (Alram 1986: types 511 to 543): Apart from the very first issues which still follow earlier iconography (Alram 1986: types 511 to 514; see Pl. 1:1), all the coins of this group (mainly first half of 2nd. cent. BCE) show a building on the reverse with double doors topped by three squarish features decorated with horn shaped elements (pls. 1:2-3, 2:1-2). The ruler is shown left of the building and a standard is placed to the right of the building. These coins represent the oldest issues in the *frataraka* series. The head of the rulers Baydad, Ardaxshir I, Vahbarz and Vadfradad I is shown facing right on the obverse. Vadfradad I, the only king who sometimes holds a bow in his left hand, introduces a winged bust above the monument. A nearly identical image as on these coins, a king and a standard flanking a building, is known from an unprovenanced clay bulla (Pl. 2:3) (Ghirshman 1962: 110, fig. 128).
- Group B (Alram 1986: types 544 to 563): the second group shows a similar building, but with (usually crenellated) battlements on the corners (Pl. 3). The rulers head continues to face right. Gradually, the quality of the representations deteriorates as the ruler’s head and the representation on the reverse become more and more stylised. The first issues of this type already started with Vadfradad I (Alram 1986: types 544-545). On his coins one finds the same standard as on the group A coins to the left of the monument. On one of his issues a winged Nikè holds a laurel crown above the kings head at the left of the monument (Pl. 3:1-2). The following issues are ascribed to Vadfradad II (?), who is to be dated somewhere around 140 BCE, to the unknown king I, to Darev I and to Vadfradad III. Vadfradad II adds a bird on top of the earlier standard, a feature which becomes the dominant or sole element of the standard on the later issues of this group.
- Group C (Alram 1986: types 564 to 586): the third group starts with the reign of Darev II and mainly dates to 1st. cent. BCE (Pl. 4). They show a “Parthian” style head facing left on the obverse. On the reverse there is a standing person holding a long barsum next to a fire altar. Such coins were issued by Darev II, Ardaxshir II and Vahshir.

- Group D (Aram 1986, types 587 to 655): the fourth group includes some coins of Vahshir and those of his successors (Pl. 5). They combine the left facing head of the obverse with a variety of representations on the reverse. Among these are the king's head (facing left, right or frontal), a triskele, a standing person holding a barsum in front of a star and moon, a stylised diadem and an investiture scene. These coins are ascribed to the rulers Pakor I, Pakor II, Nambad, Napad, unknown king II, Vadfradad IV, Manchihr I, Ardaxshir III, Manchihr II, unknown king III, Manchihr III, Ardaxshir IV, Shabuhr and Ardaxshir V. The latest coins of Ardaxshir V are followed by those in his capacity as the first Sasanian king Ardaxshir I (Pl. 5:12).

Although some similarities between the Achaemenid towers (Pl. 6-7) and the *frataraka* constructions on the group A and B coins are undeniable, such as the stepped platform, the central door and the dentils below the architrave, these aspects are of a too general character to have much significance. Most of these similarities are also known from other Achaemenid monuments and do not specifically link the *frataraka* monuments to the Naqsh-e Rostam and Pasargadae towers. The real comparison does not go much beyond their general “tower” shape.

The differences between the Achaemenid towers and the “early” *frataraka* monuments are thus — at least in our opinion — much more striking than the similarities. Dominant features that distinguish the monuments from each other are:

- Achaemenid towers (Pl. 6-7):
 - have a narrow and high stair leading up to a small, centrally placed double door, about halfway up the monument
 - Have a low, almost flat pyramidal stone roof, without any pediments or decorations
 - Have blind windows in 3 walls suggesting the presence of multiple floors.
- *frataraka* monuments:
 - have a wide double door, filling the entire front of the monument, up to the top.
 - Have a parapet of three blocks crowned with horn shaped elements (group A coins only).

What may mostly unite the Achaemenid towers at Naqsh-e Rostam and Pasargadae with the *frataraka* monuments is the fact that up to now, the function of both remains unknown and one can freely speculate about an identical significance. Whereas the character of the Achaemenid towers remains a matter of dispute (Potts provided an extensive survey of possible functions, Potts 2007: 278-296; see also Goldman 1966:127-133), the significance of the *frataraka* monument can — at least in our opinion — be convincingly explained by comparing them to Greek and Roman monuments.

Before venturing into the function of the *frataraka* monuments, let us first survey the architectural details as they appear on the coins of group A from Baydad to Vadfradad I, which provide us with the most detailed representations. Of course, one has to realise that even the most detailed representations on coins are still strongly stylized.

- the doors. The monuments on the coins have wide doors with two wings, decorated with horizontal panels or bands. This can be compared with the entrances to the royal Achaemenid tombs at Naqsh-e Rostam and Persepolis (Pl. 7). The upper part of their high doors was carved in the rock while the (now missing) lower part were the actual functioning doors or closing stones. The remaining upper part shows a horizontal panelling that compares to that on the *frataraka* monuments. It demonstrates the obvious relation between Achaemenid and *frataraka* architecture.
- the roof decorations. Three rectangular blocks with vertical recesses and with large horn shaped extensions on the corners are placed on top of the monument. These decorations, cautiously described by Potts as “the strange features depicted on the rooftops” have been variously interpreted. Potts (2007: 291-296) provided an extensive survey of the different views and we do not need to repeat them here in detail. Mostly they were regarded as fire altars, an interpretation not shared by Potts, with the pins or horns representing flames. Some authors saw them standing on top of a tower shaped monument comparable to the Ka’ba-i Zardusht, others considered them to be distorted representations of altars that were in reality standing inside a “temple”.

The first to identify these elements correctly as parapet ornaments was Tilia (1969: 36-37), who discovered such ornaments at Persepolis (Tilia 1969; 1972; Pl. 8-9). She was able to reconstruct the parapet on the ter-

race wall, south and west of Palace H. Although the decoration on the rectangular blocks is different, the shape and position of what she called the “semi-conical elements” is too similar to be coincidental. On some detailed coins we can also observe small horizontal lines that connect the three elements (see Pl. 1:3), obviously indicating the low blocks that interconnect the larger elements at Persepolis. The parapet blocks at Persepolis are decorated with an arrow pointing upwards, which reminds us of course of arrow slots in architecture. Other stones show a cross-like pattern with two triangles and two squares. It is remarkable that an identical decoration of an arrow slot shape and a cross-like pattern is visible on a stepped battlement found in the Kanishka temple at Surkh Kotal (Afghanistan), probably dating to the 2nd. cent. A.D. (Schlumberger 1969: ill. n° 10; Pl. 9:3).

Concerning the *frataraka* coins Tilia observed (1969: 38 note 122) “... an edifice, which on top presents elements resembling our parapet”. She suggested (Tilia 1972: 315, note 1): “...would it then be too audacious to suggest that the elements on top of the tower depicted on the coins were meant to represent the parapet elements, which had remained on top of the Terrace wall, and which perhaps had been held sacred by the so-called fratadara or frataraka Princes?” Tilia also recognised the strong similarity with Minoan parapet decorations (Tilia 1969: 38-39). On Crete, these were interpreted as horns in view of the important role of the bull and bull’s horns in Minoan iconography. Without attaching any intrinsic value to the label, we will formally refer to these pins as “horns”.

Also Leo Trümpelmann (1991: 53-54, Abb. 84 & 86), later followed by Josef Wiesehöfer (1994: 67, 79), pointed to the resemblance between the Persepolis southwest and south parapet and the *frataraka* coins.

Tilia was able to restore the parapet to its original location and established the presence of an apparently important passageway with finely polished floor stones along the edge of the terrace.

This type of parapet was only found around this particular corner of the Persepolis Terrace, near “Palace H”, and is otherwise unknown since the remainder of the terrace was decorated with stepped crenellations. This could of course mean that there stood a special building behind the “horned” parapet. Tilia suggested in her 1969 publication that it may have been related to an edifice that preceded Palace H. This means that the parapet would be of Achaemenid date if one assumes,

with Schmidt (1953: 279) that Palace H is post-Achaemenid in construction (Tilia 1969: 41-42). Though, Tilia expresses doubts whether this was indeed the case (Tilia 1968: 42).

In her 1972 book, however, she clearly states that on this part of the terrace stood a palace of Artaxerxes I. After the destruction by Alexander the Great this would have served (in post-Achaemenid times) as the foundation for another building. This building would have been a residence for one of the rulers of Persis (Tilia 1972: 252, 258, 314- 315; see also Wiesehöfer 1994: 69-70, 79). On top of the small mound a new building was erected. If this was indeed the case, one could even suggest that it is the location of the *frataraka* building which figures on the coins. This idea was already suggested by L. Trümpelmann 1991: 53, but he also wrote: “Die Frage ist, ob auf den Münzen ein Palast oder ein Tempel abgebildet ist”. The excavation of the small mound at the south-west corner of the Persepolis terrace could eventually provide some answers.

- the roof edge. The small scale of the monument’s representation did not allow to show much detail. A simple horizontal band is shown with pending dentils. These dentils seem to run all around the building. Such dentils, imitating the ends of wooden beams used in roof constructions, are present as decorative elements on the royal Achaemenid tombs and on the Zindan-i Suleiman at Pasargadae and the Ka’ba-i Zardusht at Naqsh-i Rostam (Pl. 6-7). On these buildings they are confined to the space between the vertical corner elements of the buildings. On smaller decorative elements they are sometimes used across the corners (see parapets Pl. 8). Whether these elements on the coin representations were the ends of actual wooden beams used in a roof construction or were purely decorative elements, a common feature in Achaemenid architecture, remains of course unknown.
- the double plint. Multiple plints are widely used in Achaemenid architecture to elevate tombs, altars and monuments, such as the tomb of Cyrus or the representations on the royal tombs (Pl. 6-7). Also, in post-Achaemenid times this tradition is continued as evidenced in the tomb at Buzpar (Wiesehöfer 1994: 81; Huff 2004: 615-616; Stronach 1978: 300-302, Pl. 182-185).

The monuments thus clearly borrow extensively, as was to be expected, from local Achaemenid architectural traditions.

Remains the question of the *size* of the monument as a whole. The clue to this lies in the architectural details of the building. The large double door takes up more or less $\frac{2}{3}$ of the width of the entire monument. If one conjectures the width of one doorwing to be between 1 meter and 2 meters at the most, this would bring the *frataraka* monument as a whole (with its double winged door) to a total width of 3 to 6 meters. To facilitate the present reasoning, let us tentatively start from a width not exceeding 1.5 m for one doorwing and consequently assume a total width for the monument of 4.5 meter at the most. The height of the monument on the Baydad coin (Pl. 1:2) would then be about 5 meters without the podium and the roof decorations and about 9 meter including the stepped platform and roof parapets. If one starts from a more minimalistic point of view with doorwings of 1 meter wide, the monument is even smaller. The width of the building itself would be merely 3 meters and the total height, including podium and parapets, only about 6 meter. It is obvious that we can safely assume that a fairly small monument is represented on the *frataraka* coins. At the same time, however, the representations on the group A and the earlier group B coins indicate without any doubt that the monument exceeded the height of a standing person.

The *character* of the monument can be expected to be religious and/or dynastic/ancestral. Few other reasons could explain the presence of such a monument of the reverse of the coins. The coins of Baydad to Vadfradad I (group A; Pl. 1-3) show the monument between a standard and a royal figure holding one hand up in reverence. The presence of the winged bust above the monument on the coins of Vadfradad I completes this scene. While Vadfradad holds his right hand in reverence, he has his left hand on a composite bow that rests on his left foot (Pl. 2:2; on the significance of the bow, see Wiesehöfer 1994: 110-111).

The scene is an obvious reference to the representations on the royal Achaemenid tombs at Naqsh-e Rostam and Persepolis. (Pl. 7). The Achaemenid kings are shown in exactly the same way, standing in front of a fire altar above which hovers the winged human figure. The *frataraka* did indeed use an identical setting but with the tower shaped monument instead of the fire altar with flames. The link between the *frataraka* monument and the Achaemenid fire altar is not only provided by the general scene but also by the fact that on later *frataraka* coins a fire altar takes the place of the monument (Pl. 4; group C coins).

All this suggests a close relation of the monument with the fire cult, and — in line with the interpretations of the Achaemenid towers- an identification as possible fire temple has been suggested. Other scholars thought it be a massive altar (for a survey of such interpretations, see Potts 2007). Indeed the difference between representations of buildings, altars, fire altars and even astodans is not always easy to make. A fine example are the Sasanian so-called “fire-altars” at Naqsh-e Rostam, Bagh-e Budreh, Pingan and Qanat-e Bagh (Pl. 10-11). These monuments were generally considered to be Sasanian Zoroastrian fire altars. Huff convincingly demonstrated, however, that they were in fact astodans (see Huff 1992; 2004: 608-609). He discovered fragments of a domed cover at the Pingan “altar” underneath which the human remains were once placed (Pl. 11:2). The same iconographic mixture is encountered in Central Asia where one finds small ceramic ossuaria in the shape of buildings/monuments (Pl. 11:4-5).

An interpretation of the *frataraka* representations can be advanced when the *frataraka* monuments on the Group A and B coins are compared with Greek and Roman altar shrines and representations on Roman coins. These altar shrines consisted of a temenos wall within which the actual altar was placed. Rituals and offerings were performed inside the temenos walls and apart from the altar, there may, of course, also have been effigies of gods.

The most famous and best preserved altar-shrine is undoubtedly the Ara Pacis in Rome, built during the reign of emperor Augustus (Pl.12). Its concept was much older, though, and is thought to have been based on the famous “Altar of the 12 gods” or “Altar of pity” on the Athenian Agora dating from the late 5th. cent. BCE (Pl. 13 top; Thompson 1952).

In its present reconstruction, the Ara Pacis in Rome does not have doors. The front and back entrances are open, leaving the altar in full view. Although there is no unanimity, there are convincing arguments to suggest that the monument was originally closed with doors. Roman coins from Nero and Domitian show an “Ara Pacis” monument with closed doors. It is thought to show the Ara Pacis that was erected in Lugdunum (Lyon) to commemorate Nero’s peace with Parthia of A.D. 64 (Pl. 14). Its shape and decoration shows its direct dependancy on the Augustian Ara. These representations of the Lugdunum peace altar demonstrate that it had large double doors. Other Roman coins illustrate similar altar shrines, all of which have double access doors (Pl. 14; Tameanko 1999: 214-221). Titus issued

several coins with an altar shrine dedicated to the goddess of health Salus. On a tetradrachm struck at Ephesos, one sees a rectangular shape above the lintel of the monument (Pl. 14:4). Tameanko suggests that this is the top of the central altar appearing above the temenos wall, since on an issue from Antoninus Pius there are flames rising from such a rectangle (Pl. 14:7; Tameanko 1999: 220).

These Greek and Roman altar shrines thus consisted of a temenos wall around an altar. The Ara Pacis in Rome had a main entrance gate at the front and a smaller gate at the back. Based on the Roman numismatic evidence, it seems logical to accept the existence of doors on the Augustian Ara Pacis. Since coins show towering flames above altar shrines with closed gates, these doors apparently closed off the sacred area during certain rituals and offerings, keeping these out of view of the uninitiated. These Ara Pacis doors must have opened to the outside, rather like a closet or “tabernacle”, and not to the inside as is more common on buildings. This can be deduced from the plan of the Ara Pacis in Rome (Pl. 12). Opening the gates to the inside would have blocked the passageway around the central altar.

The general outlook of some of these Roman altar shrines is surprisingly close to that of the *frataraka* monuments. They are often placed on a stepped podium, have large doors that can fill the entire front and have a large architrave as “roof” upon which corner parapets can be placed. In view of this, we suggest to see the *frataraka* monument as a similar altar shrine, consisting of a gated area with an altar and/or effigy placed inside.

The way the doors of the *frataraka* shrine opened is also of importance to reconstruct its general shape and lay-out. The *frataraka* monument has always been considered to have had a square plan. This very plausible idea followed almost naturally from the comparisons with the Achaemenid towers. It was also in line with the concept of the later “chahar taq” fire temples. If the monument did have a square plan, the doors could have opened to the inside or the outside. Opening such wide doors to the outside, however, would make more sense as this would have left considerably more usable space on the inside. If they opened to the outside, the possibility of a rectangular plan, similar to that of the Ara Pacis in Rome, must also be considered. Based on the idea that the roof decorations continued all around the monument, tentative reconstructions with a square or rectangular plan can be made (see Pl. 13 below).

On later *frataraka* coins (group B), the altar shrines are much more stylized and were easily misunderstood as actual altars. Although the height of the monument still exceeded that of the standing figure on the coins of Vadfradad I and II (Pl. 3:1-3), the strongly stylised Darev I and Vadfradad III coins on Pl. 3 show the king larger than the monument (Pl. 3:5-8). The wings of the figure above the monument are sometimes shown as rough oblique lines that could all too easily be misinterpreted as “flames” on a fire altar. The fact that the three horned parapets of the group A coins changed into simple triangular or crenellated parapets on the corners only adds to the confusion. It is a shape well known from some Achaemenid altar representations on, for example, seals (see Houtkamp 1991: 27-31, fig. 2-6). However, Houtkamp points out that the identification of these altars as “fire altar” is controversial. There are no clear depictions of a burning fire and they are not shown in association with specific fire altar rituals (involving the *barsum*). Some nevertheless consider them to be fire altars, while others cautiously refer to them as “tower shaped altars”. Because of their “tower shape” these representations are often linked to the Naqsh-e Rostam / Pasargadae towers and the *frataraka* monuments.

The coins of Vadfradad I and II (Pl. 3:1-3) are detailed enough to show that the same type of building as on the group A coins is still being represented. The only fundamental change at this time is the type of parapets (compare also to the ossuaries, Pl. 11:4-5). The monument is still larger than the standing figure(s). The presence of the king, the standard, the winged bust *and* large double doors and dentils along the roof’s edge confirm the continuation of the iconography. On the small and strongly stylised 2nd. and 1st. century BCE coins after Vadfradad II, the entrance to the building is sometimes indicated by merely one or two vertical lines and without the earlier representations it would indeed be impossible to identify this as an indication of doors.

Exactly like in the case of the *frataraka* coins, several representations of altar enclosures or “altar shrines” on Roman coins were wrongly identified as actual altars, as scholars somehow disregarded the presence of doors on these representations (Tameanko 1999: 214). The presence of flames towering above the shrine (Pl. 14:7), a fire that in reality must have been burning on the altar inside, was actually seen by many as a confirmation for the altar interpretation. It suffices to look at the Roman Ara Pacis, however, to understand how towering flames on the elevated altar could have been visible from the outside of the enclosure (Pl. 12).

The building shown on the group A and B *frataraka* coins can thus be compared with Greek and Roman monuments. It could be seen as a temenos shrine or as an enclosure with doors and a central (fire) altar. The question remains of course whether this was indeed an “open-air” structure like the Greco-Roman examples. The presence of a roof can not be excluded. It has been argued that the sun should not shine on a consecrated Zoroastrian fire (Huff 2004: 609 note 39, citing F. Justi), something that would necessitate the presence of a roof. Other sources, like Herodotus (I.131-132) indicate the importance of open-air rituals among the Achaemenid Persians. There is simply not enough evidence at hand as we know but few, if any, of the rules and practices of the early Zoroastrians (see Potts 2007: 283).

Based on the available evidence, we can not see a strong link between the structures on the *frataraka* coins and the tower shaped Achaemenid monuments at Pasargadae and Naqsh-e Rostam. The *frataraka* monuments are very different because of their large doors and roof parapets. Because of the similarity in shape between these parapets and those at Persepolis, one could speculate that it represents a *frataraka* monument that was constructed on the Persepolis terrace, possibly where the so called “Palace H” once stood.

An important change in the iconography of the *frataraka* coins took place in the course of the first century BCE. From Darius II onwards (i.e. on the coins of Group C with a Parthian style head facing left), an actual altar is depicted instead of the traditional “altar shrine” (Pl. 4).

In his paper Potts (2007: 296) states: “In reviewing this material, I cannot see how the freestanding altars of the later Persis and Sassanian coinage can possibly be derived from the structure, with its architectonic elements, found on the later *frataraka* and later Persid shah coinage”. If we are correct in our interpretation of the early monuments on Groups A & B as (fire) altar shrines or enclosures, this problem is easily solved. As the fire altar stood inside the building, all who saw the monument on the coins would make the link with the (fire) cult and there would be no need to show the altar itself. Once the fire altar is shown instead of the building, also the setting of the whole scene becomes different. The “standard” is removed from the image and the king’s attitude changes. He is no longer shown in an attitude of reverence with one hand upwards but is now holding a barsum. The king is thus shown performing a ritual *at* the altar, a ritual which

one would presume to have taken place inside the altar shrine shown on the earlier coins. About the reason behind this change one can of course only speculate. Wiesehöfer argued that it does not mean that a priest or “*Magier*” is shown. He stated that the *frataraka* wear the “*satrapen-tiara*” and not the “*magier-tiara*” and hold the barsum in the right hand and not in the left as priests supposedly did (Wiesehöfer 1994: 131-134). This argument, however, overlooks those representations where the king is shown left of the altar and clearly uses his right arm to hold the barsum (Pl. 4:3). As only one arm is shown on these coins, it looks as if the figure was simply holding the barsum with both hands. Showing the performance of a ritual at a fire altar rather than the previous demonstration of reverence to a religious monument, must have had a specific significance. Possibly the rulers had received (or claimed) the right to perform certain rituals and in doing so, demonstrated their equality with or (political) grip on the priestly classes. Why the scene disappeared again from the reverse of coins during the reign of Vahshir (Group D; Pl. 5) remains an open question. It must have some important significance as the image is revitalised by the Sasanians. A fire altar with strong formal references to the Achaemenid era reappears on the reverse of the coins of Ardashir V who, as Ardashir I (Pl. 5:12), becomes the founder of the Sasanian dynasty, a dynasty that would later claim to descent from the bloodline of priestly rulers of Istakhr.

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Pl. 1. Silver tetradrachms of Baydad (nrs. 1 & 2) and Ardaxshir I (nr. 3).
 (sources: 1. <http://www.zeno.ru/showphoto.php?photo=23488&cat=3179&limit=recent>;
 2. <http://www.zeno.ru/showphoto.php?photo=23489&cat=3179>;
 3. <http://www.zeno.ru/showphoto.php?photo=23483&cat=3180>)



Pl. 2. Silver Group A tetradrachms of Vahbarz (nr. 1) and Vadfradad I (nr. 2) and a clay bulla with seal impressions, allegedly from Fars.

(sources: 1. http://www.wildwinds.com/coins/greece/persis/Alram_526.jpg;

2. <http://www.grifterrec.com/coins/persis/persis.html>; 3. Ghirshman 1962: fig. 128)



Pl. 3. Silver Group B tetradrachms of Vadfradad I (nrs. 1 & 2), Vadfradad II (nr. 3), silver drachm of Unknown king I (nr. 4), Hemidrachms of Darev I (nrs. 5 & 6) and Drachm and Hemidrachm Vadfradad III (nrs. 7 & 8).

(sources: 1. Allotte De La Füye 1905: nr. 18;

2. Alram 1986: nr. 544;

3. Alram 1986: nr. 546;

4. http://www.parthia.com/coins/pdc_33867.jpg;

5. http://www.parthia.com/coins/pdc_33868.jpg;

6. http://www.parthia.com/coins/pdc_33869.jpg;

7. http://www.parthia.com/coins/pdc_33870.jpg;

8. http://www.parthia.com/coins/pdc_33872.jpg)



Pl. 4. Silver Group C drachms of Darev II (nr. 1) and Ardaxshir II (nr. 2) and half drachm of Vahshir (nr. 3).

(sources: 1. http://www.parthia.com/coins/pdc_33873.jpg;

2. <http://www.zeno.ru/showphoto.php?photo=23482&cat=3188&limit=recent>;

3. <http://www.forumancientcoins.com/roman-coins.asp?vpar=892&pos=0&sold=1>)



Pl. 5. Silver group D drachms and hemidrachms of Persis rulers (nrs. 1-10) and of Ardaxshir as last Persis ruler (nr. 11) and first Sasanian ruler (nr. 12).

(sources: 1. <http://www.zeno.ru/showphoto.php?photo=22056&cat=3190&limit=recent>;

2. <http://www.zeno.ru/showphoto.php?photo=22060&cat=3191&limit=recent>;

3. <http://www.zeno.ru/showphoto.php?photo=18033&cat=3192&limit=recent>;

4. <http://www.zeno.ru/showphoto.php?photo=23491&cat=3193&limit=recent>;

5. <http://www.zeno.ru/showphoto.php?photo=18035&cat=3194&limit=recent>;

6. http://www.parthia.com/pdc_peus386_4.htm;

7. http://www.parthia.com/pdc_peus386_4.htm;

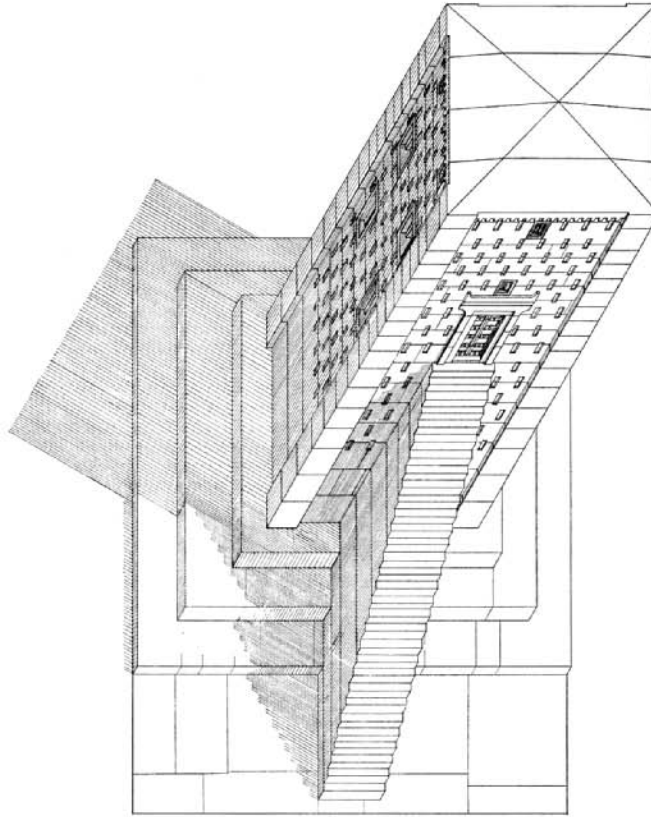
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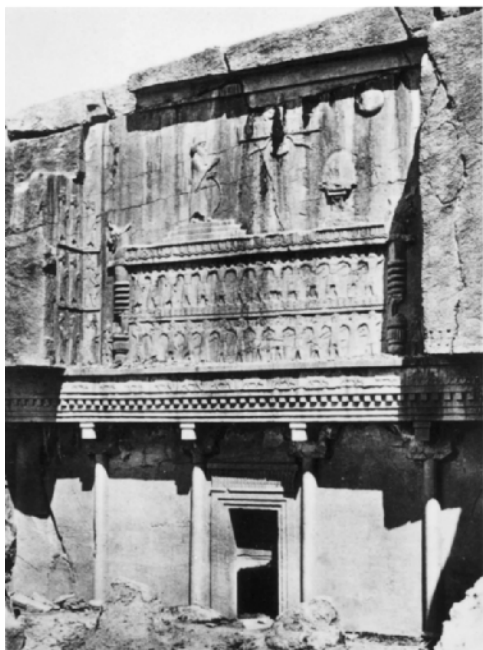
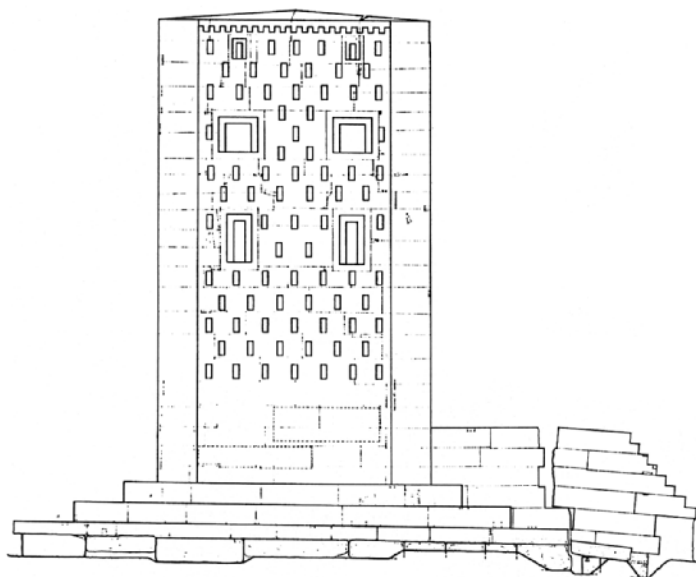
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11. <http://www.zeno.ru/showphoto.php?photo=15053&cat=3203&limit=recent>;

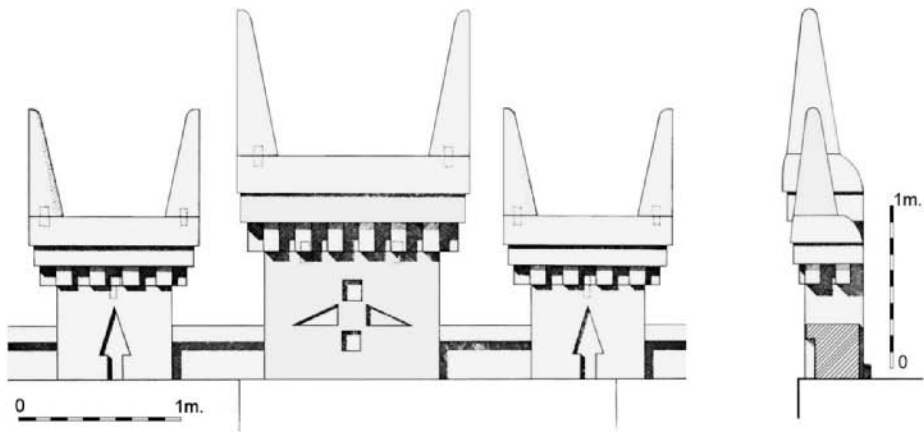
12. Royal Museums of Art and History, Brussels, inv. IR.1762)



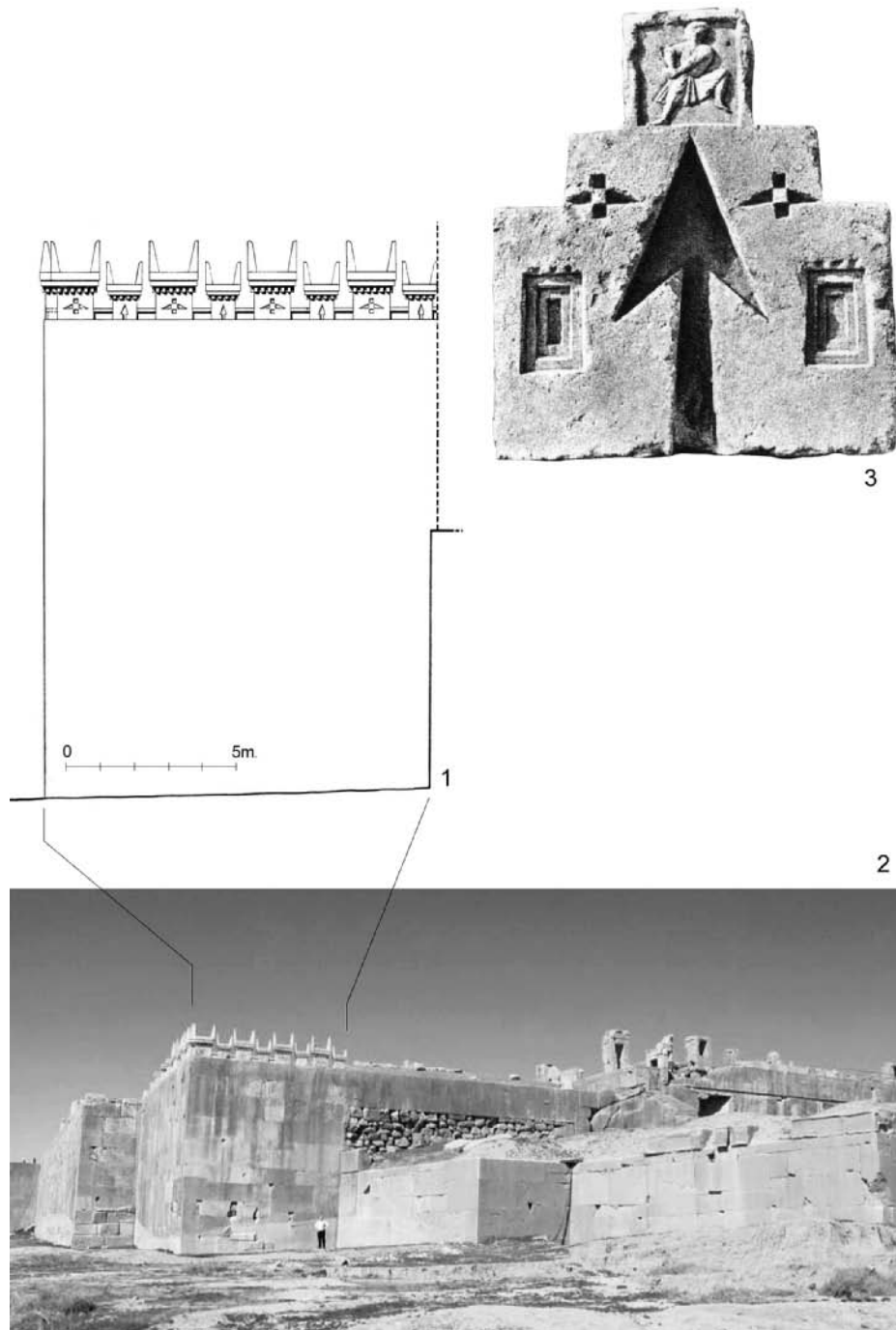
Pl. 6. The Achaemenid tower at Pasargadae: axonometric reconstruction (top, Stronach 1978: fig. 66) and its state of preservation before recent restorations (bottom: Tilia 1972: Pl. LXXIV).



Pl. 7. Side view of the Achaemenid tower at Naqsh-i Rostam (after Schmidt 1970: fig. 9) and views of the Achaemenid royal tomb of Artaxerxes III at Persepolis (after Herzfeld 1988, pl. XLV).



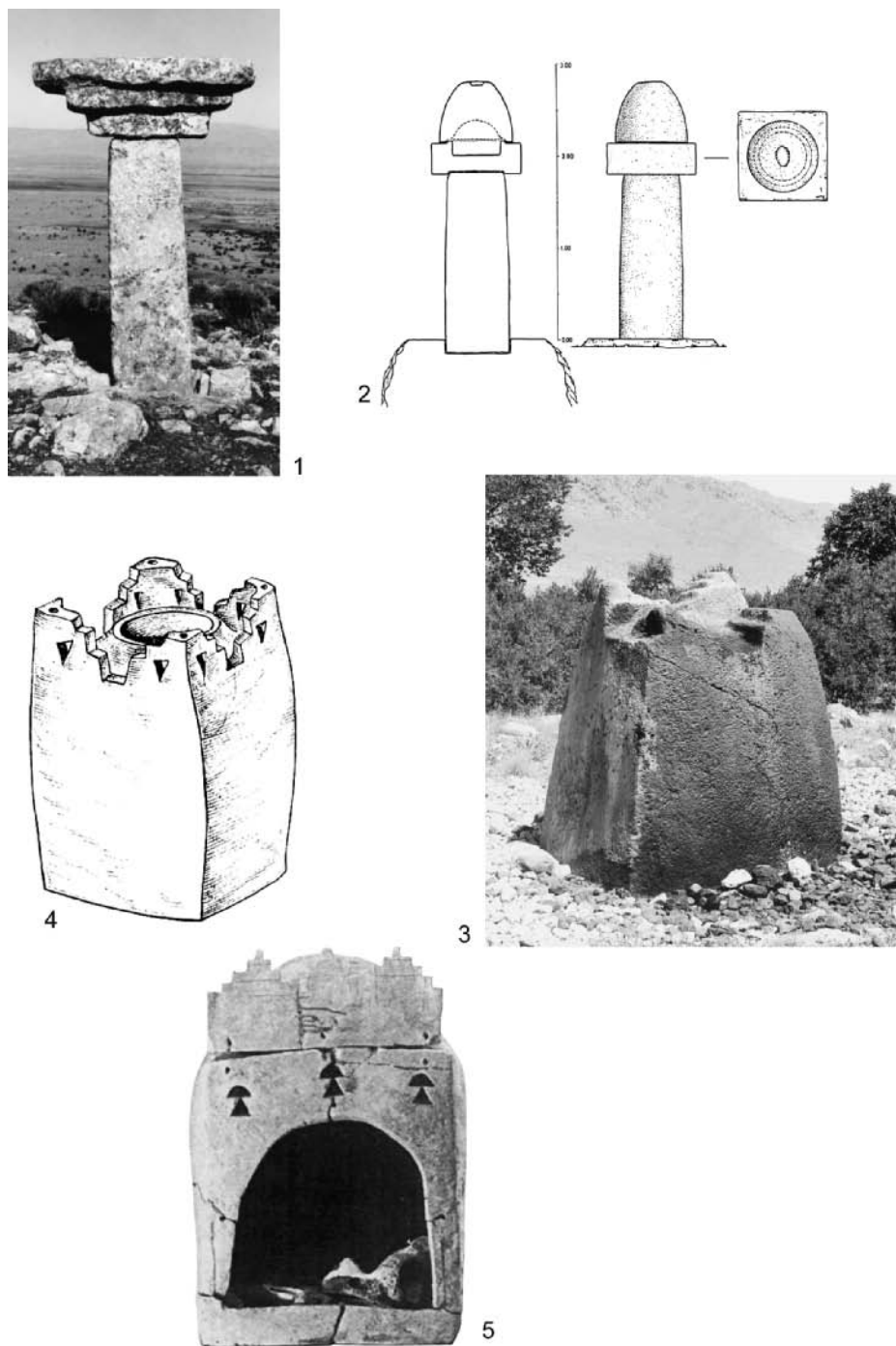
Pl. 8. Parapet elements on the terrace at Persepolis. (top: after Tilia 1969: fig. 5 / center: Tilia 1972: fig. 128)



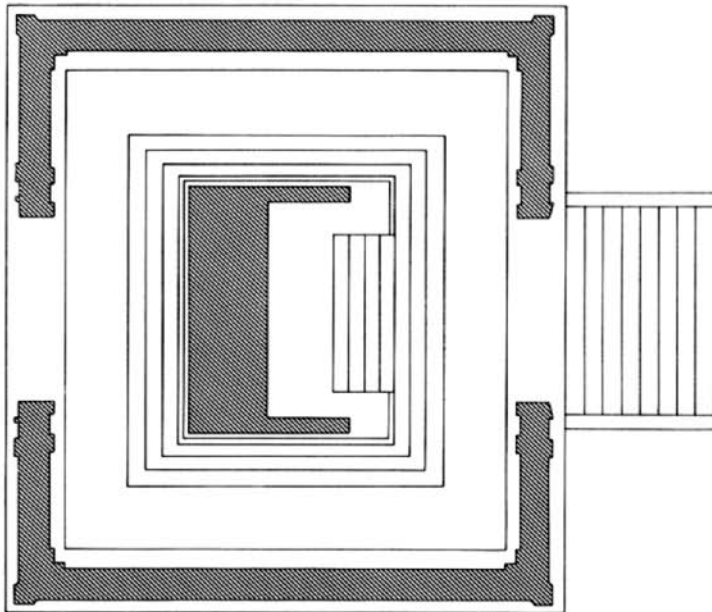
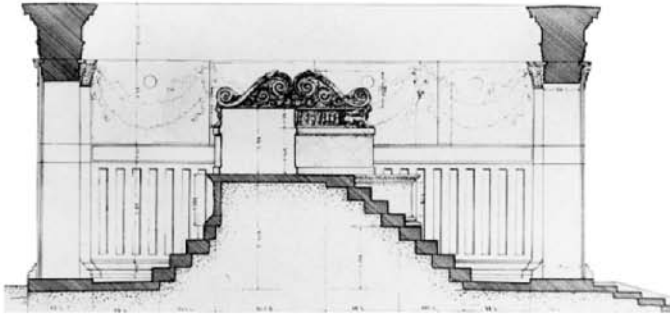
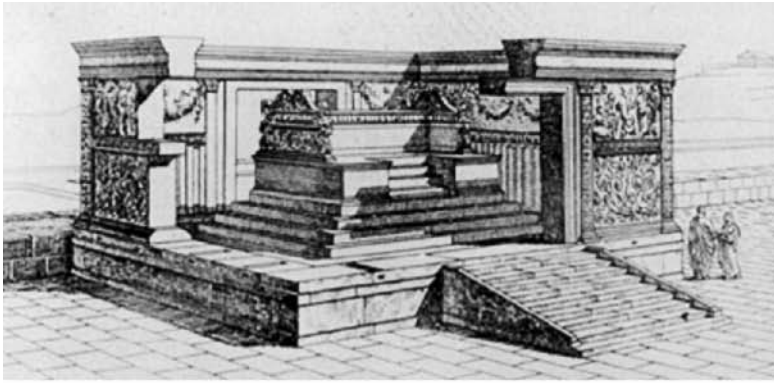
Pl. 9. Terrace wall with parapets at Persepolis and a parapet fragment from Surkh Kotal, Afghanistan (Persepolis: drawing after Tilia 1969: fig. 6, foto http://www.livius.org/a/iran/persepolis/terrace/persepolis_terrace_4.JPG; Surkh Kotal: Schlumberger 1969: ill. 10)



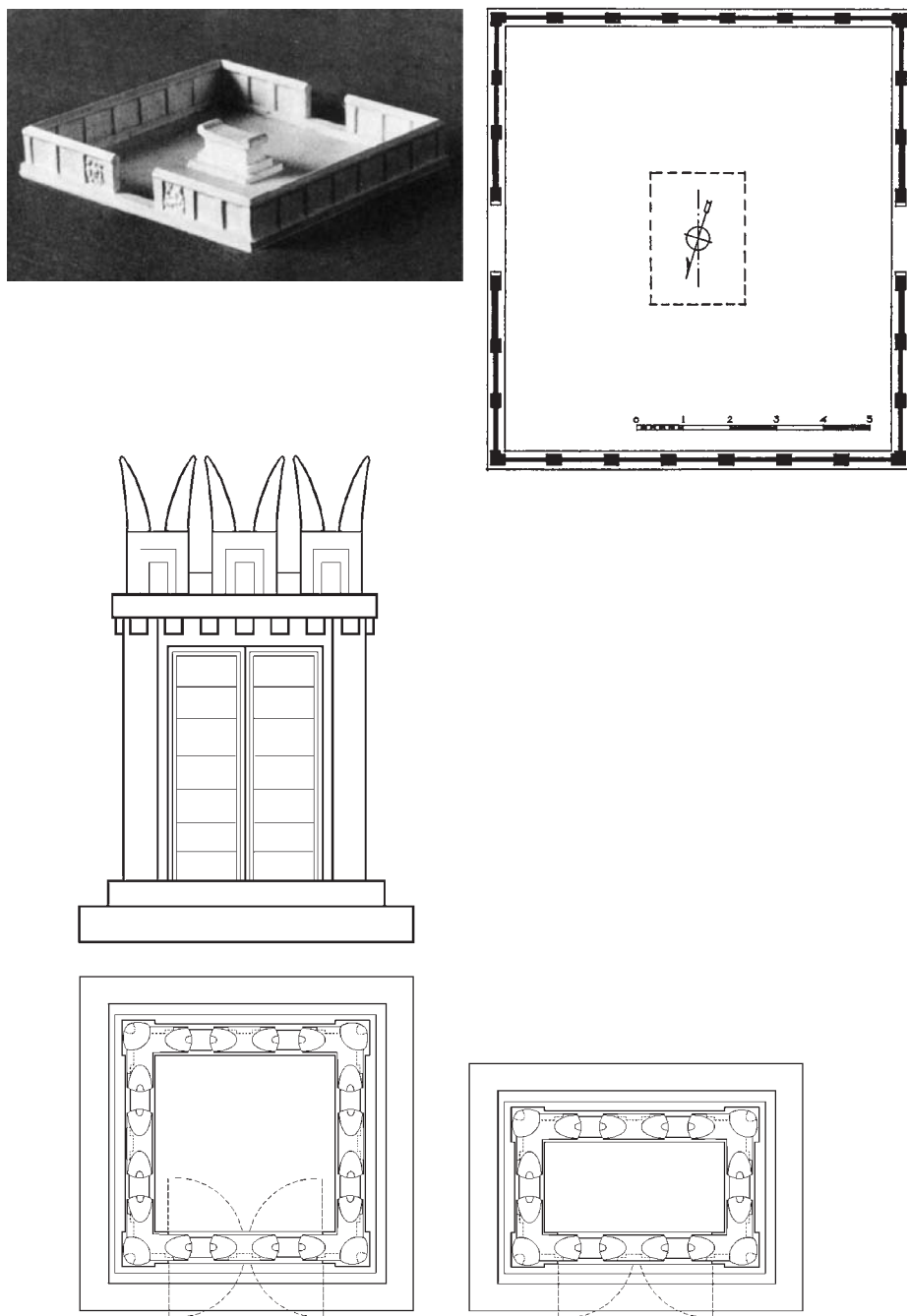
Pl. 10. Astodans at Naqsh-i Rostam, previously considered to be fire altars.



Pl. 11. Astodans from Iran (nrs. 1-3) and ossuaria from Central Asia (nrs. 4-5).
 1. Qanat-i Bagh (foto E. Smekens, UGent); 2. Pingan reconstruction (after Huff 1992); 3.
 Bagh-i Budrah (foto E. Smekens, UGent); 4 & 5. Central Asian ossuaria (after Kosche-
 lenko 1985: 448 and Kochelenko 1977: fig. 29)



Pl. 12. The Ara Pacis of Augustus at Rome: reconstruction and plan (after Moretti 1948: 115 fig. 99, Pl. 6 and Settis 1988: fig. 180).



Pl. 13. Top: reconstruction and plan of the “Altar of the 12 gods” at Athens (after Thompson 1952: figs. 3 & Pl. 18d). Bottom: tentative reconstruction of the building on the *frataraka* group A coins with a square and a rectangular plan.



Pl. 14. Roman coins with the representations of altar shrines (nrs. 1-4 & 6-8, Tameanko 1999: 215, 218-220; nr. 5, Settis 1988: fig. 181).

SOME PARTHIAN QUEENS IN GREEK AND BABYLONIAN DOCUMENTS

BY

Joan M. BIGWOOD

(Victoria College, University of Toronto, Canada)

Abstract: Documentary sources (the two Greek parchments from Avroman and an assortment of cuneiform tablets from Babylonia) make reference in their dating formulae to fourteen otherwise unknown Parthian queens of the last 150 years BC. Treated individually, as they are normally treated, these allusions perhaps tell us little. However, if considered together, they make a significant contribution to our knowledge of a group at the Parthian court about which the Greek and Roman literary sources provide an exceedingly limited amount of information.

This article comments on problems in the evidence for the fourteen queens. It considers, too, their title in Greek and in cuneiform (as well as what is known of the titles of women of high status in Parthian), for all of them, unlike the royal women of the literary sources, have a title. In addition, it looks at the question of the ranking of such women, one in relationship to the others, and at the marital alliances of the kings — at sibling-marriage, for example, for which, despite what is sometimes claimed, credible evidence is very sparse.

Keywords: Parthia, queens, Avroman, cuneiform, title, marriage.

1. Introduction

The royal women of Parthia are shadowy creatures. In general in the surviving Greek and Roman literary sources they are referred to only in passing, very much less being reported of them than of their predecessors of Seleukid (or of Achaemenid) times. One queen, the infamous Mousa, allegedly the murderer of her husband (Phraates IV) and marriage partner of her son (Phraatakes), is a notable exception: a tale in Josephus (*AJ* 18.39-44) tells us something of her remarkable career and she is also represented on coins¹.

¹ Dates are BC where no indication to the contrary is given. On the problems of the sources (literary and non-literary) for the various aspects of Parthian history see Wiesehöfer 1998, an important collection of articles; cf. also the comments of Gaslain 2003, in his discussion of Parthian women, an account useful in particular for the archaeological evidence.

However, in addition to the literary allusions, we possess some important documentary evidence for royal women. Indeed, the two Greek parchments from Avroman, published by Minns in 1915, and, besides these, an assortment of cuneiform texts from Babylonia, together make reference to fourteen otherwise unattested queens.

A number of these royal women have at times been alluded to in modern discussions, but there has been almost no consideration of the group as a whole. Minns, the only scholar to treat both the cuneiform and the Greek testimony, provides useful comments, although not surprisingly the Babylonian material that he cites is in need of some updating. Much more recently Del Monte (1997), in his collection of texts of Hellenistic Babylonia, has included most of the relevant cuneiform evidence, along with much valuable discussion of problems, particularly those concerning dates. However, he makes no allusion to the Avroman testimony, and in a general work dealing with the years from Alexander the Great to the first century BC there is much about the queens that he has to leave out². The present study looks at all the relevant documents, Greek and Babylonian³. Although individually they perhaps tell us little, if considered together they shed significant light on the Parthian court of the last one and a half centuries BC, the period to which all of them belong.

On what is known of Mousa see, as well as the last-mentioned article, the reassessment of Bigwood 2004. For an additional brief account of Parthian (and Sasanian) royal women see now Brosius 2006: 106-110 and 172-178. I should also note here that the final version of the present study was complete before I saw Assar 2006 with its revised Parthian chronology for the years 165-91 BC. I have not, however, yet seen those studies of his which bear a date after 2004 and which are listed there (2006: 153). These will contain his suggested revisions of the dating for the years 91-55 BC, as well as other years.

² I describe them from the beginning as “queens,” although the question of their title is not discussed until section 3. For a number of them cf. also Wolski 1952/53: 64-68 and Sullivan 1990 (see the index under “Parthia”), who comment on royal marriage alliances, and cf. Shahbazi 2003: 12: 1. Gaslain 2003: 108 n. 58 names some members of the group, but provides little discussion of them.

³ I do not deal other than incidentally with the royal women known only from Greek and Roman literary works. In regard to the Babylonian evidence it will be remembered that conceivably there are unpublished cuneiform tablets which contain further references to the women discussed here (or even additional names). I should add that I am keenly aware that in the following pages I range far beyond the area traditionally dealt with by classicists. I do so, however, in order to draw attention to sources which deserve to be treated together rather than in isolation from each other, and which are often overlooked.

It needs to be emphasised, however, from the start that the information provided in these texts is severely limited. Whereas Seleukid royal women appear in documents in a variety of contexts (although never in the part supplying the date), our Parthian queens are found only in the dating formulae⁴. We meet them nowhere else. Yet, circumscribed though the testimony is, it raises some interesting questions — about the titles, for example, given to women of high status in Parthia, about the ranking of such women one relatively to the others, about their ethnic origin, about the marriage strategies of the kings, about why queens should be named in these documents at all. In section 3 I discuss titulature and what is known about the hierarchy of women of high standing. Section 4 deals with royal marital policies. But first in section 2 I outline the evidence for the fourteen queens, drawing attention as well to issues on which the later discussion will depend. We need to know, for example, to which kings they can be assigned and the relevant dates, matters on which scholars are not always agreed. Some comments will also be added on possible reasons for the presence of these royal women in documents. This section begins with the Babylonian material.

2. The Evidence and Some of its Problems

2.1 *The Cuneiform Documents*

Cuneiform sources from Babylonia preserve for us, although not always in complete form, the names (with a little additional information) of seven Parthian queens of whom we hear nothing elsewhere. The documents are of different types — astronomical, legal or literary, the so-called “astronomical diaries,” often of course fragmentary, being of particular importance⁵. Whatever their type, the documents are dated, as is normal in the Arsakid

⁴ On the Seleukid queens see Macurdy 1932: 77-101 (old, but still useful); Sherwin-White/Kuhrt 1993: 25-26, 127-128, 202-210; Savalli-Lestrade 1994; cf. also Martinez-Sève 2003, especially 698-699 and 706. Greek (and to a lesser extent Babylonian) documents provide an important part of our evidence for them. Documentary sources (mostly Elamite, but also Babylonian) are also very important for our knowledge of Achaemenid royal women, on whom see Brosius 1996; Briant 1996: 289-297, 307, 946 and Briant 2003: 395-426, 585-587.

⁵ Van der Spek 1997/98, comments on the significance of the last-mentioned records. In the following pages references to them are to the edition of Sachs/Hunger (1988-). For the documents of the Parthian period with queens' names see, in addition to Del Monte 1997, Oelsner 1975, and Oelsner 1986: 275-278.

period, by the month (sometimes along with the day) and by the year of both the Arsakid and the Seleukid eras. However, although the date of individual tablets may be known, there are often problems concerning the identity of the king. As with most Parthian documents (including coins) which predate the middle of the first century AD, normally only the throne-name Arsakes is used for the king, not his personal name. Hence it is often difficult to determine which documents belong to which reign.

The following summary of the evidence is based in large measure on the texts in Del Monte (1997), with one or two additions from the astronomical diaries (*AD* 3 and *AD* 5). It indicates for each queen the relevant document(s), and the date(s) S(eleukid) E(ra) and BC, providing also a translation of a section of the date formula and, where this is known, the personal name of the king. In the case of queens 3, 4 and 5, where there are multiple documents, the translation gives what one may reasonably assume to have appeared in the original text of each, or an approximation to this. In reality of course many tablets are preserved only in part and in some there may be slight variations of word order or of the spelling of individual names. Details of this kind will be found in Del Monte's account (1997).

1. Ri-[x]-nu⁶. Aug. 132. "Arsakes and Ri-[x]-nu his mother (AMA-šú), kings LUGAL^{meš})..." [Phraates II]
2. Ubulna⁷. April-May 128. "Arsakes king (LUGAL) and Ubulna-..." [Phraates II or successor]
3. Asi'abatar⁸. 26 March, 90 to 87/6. "Arsakes who is called Gotarzes, king (LUGAL) and Asi'abatar his wife (DAM-šú), lady/queen (GAŠAN)..." [Gotarzes I]
4. Ispubarza⁹. 5 Oct., 80 to 76/5. "Arsakes who is called Orodes, king (LUGAL) and Ispubarza his sister (NIN-šú), lady/queen (GAŠAN)..." [Orodes I]

⁶ BRM 2.53 Rev. 27-28. SE V 180 (Del Monte 1997: 245-246); [x] denotes a missing sign.

⁷ BiMes 24.43 Rev. 9'-10'. SE I 184 (Del Monte 1997: 248).

⁸ The following date from SE 6 XII₂, 221 to SE 225 (Del Monte 1997: 251-254): SBH 51+ Rev. 9'-12' (26 March 90); *AD* 3 No. -88A 'Rev. 1', Upper edge 2 (89); Rm 844 Obv. 2-5 (88); *AD* 3 No. -87C 'Rev. 52'-53' (March-Apr. 87); LBAT 1295 (87/6).

⁹ The following date from SE 232 to SE 236 (Del Monte 1997: 255): *AD* 5 No. 26 (= LBAT 1446) Obv. 1-4, dated astronomically to 5 Oct., 80 (which thus excludes 79/8, one of the years suggested by Del Monte, 255); *AD* 3 No. -77A Left edge 1(78/7); LBAT 1162

5. Piriustana¹⁰. 69/8 to 68/7. “Arsakes king (LUGAL) and Piriustana his wife (DAM-šú), lady/queen (GAŠAN)...” [Phraates III?]
 6. [...]Ištar¹¹. 28 Dec., 66. “Arsakes king of kings (LUGAL LUGAL^{meš}) and [...]Ištar his mother (AMA-šú), lady/queen (GAŠAN)...” [Phraates III]
 7. Teleonike¹². 63/2. “[...] and Teleonike [...]” [Phraates III]

2.1.1 The first two of these royal women belong to the period of turmoil which followed the initial Parthian takeover of Mesopotamia in 141, a period which saw two Seleukid attempts to regain control, repeated attacks by other neighbours and related woes¹³. The queens appear in only one document apiece, both of them legal texts from Uruk and both drawn up by the same scribe. In the earlier of the two, in many ways the most interesting of the cuneiform tablets considered here, the dating formula refers to an Arsakes who must be Phraates II. It refers also, although the name is not preserved in full, to his mother (AMA-šú), not, as one might have expected, to his wife. Moreover, the two are given the unusual title “kings” (LUGAL^{meš}), not “king” and “queen.”

Even more important, however, is the question of the date of this document in which the Arsakid year is missing and the Seleukid one incomplete. Although it was assigned by Minns to c. 139 (assumed to be the period of Phraates’ accession), Oelsner has argued that it belongs most probably to August 132¹⁴. This makes it most unlikely that the queen was acting as regent

+ 1163 Rev. 9’-10’ (78/7); LBAT 1164 + 1165 Rev. 11’-12’ (78/7); LBAT 1171 Rev. 11’-12’ (76/5); AD 3 No. -75 Obv. 1, Rev. 9’, Upper edge 1 (76/5); LBAT 1174 Rev. 11-12 (76/5). Note, however, that in AD 3 No. -77A (we have no information about the preceding year), in AD 3 No. -75 Obv. 1 (cf. Upper edge 1), and in LBAT 1174 the king is given only the throne-name. In the other documents of 78/7 and the following years the reference to the king is missing.

¹⁰ The following date from SE 243 to SE 244 (Del Monte 1997: 256): ACT I No. 194a Rev. 6’-10’ (for the date [69/8] cf. Oelsner 1975: 36-37 and 1986: 278); LBAT 1177 Rev. 6’-7’ (68/7); and from the same year the duplicates LBAT 1448 Obv. 1-4 and LBAT 1447 Flaké 1’-3’ (now AD 5 Nos. 27 and 28).

¹¹ AD 5 No. 30 (listed as *LBAT 1450) Obv. 1-3. SE 246 (not included by Del Monte).

¹² AD 3 No. -62 Obv. 1. SE 249 (Del Monte 1997: 257).

¹³ Discussed, for example, by Del Monte 1997: 102-135 and 243-249; Potts 2002; Wolski 2003: 71-75; Dabrowa 2005.

¹⁴ Oelsner 1975: 30-31 n. 14; 1986: 408 n. 570 and 1995: 148; cf. Del Monte 1997: 245-246 (who notes that none of the other documents of 138-130 includes a queen). Minns’ dating (1915: 34) is based on the comments of Clay 1913: 12-13. However, the year in which Phraates’ father (Mithradates I) died and Phraates came to the throne is in fact uncer-

for an under-age son, a suggestion of Minns, one often repeated after him¹⁵. Although we have little evidence for Phraates' career, and particularly for its initial phase, there is no reason to believe that he was a child when he came to the throne. Furthermore, the queen-mother, it should be emphasised, is alluded to only in the dating formula. The main part of the text (the dedication of a slave-girl to the gods of Uruk) omits all reference to her. The dedication is made "for the life of the king," not "kings" or "king and queen." This hardly suggests that the queen was a regent, or in any real sense a co-ruler.

2.1.2 Missing information creates even greater problems in the case of the second document, which dates to April-May 128. Here the queen's title has not been preserved, or the cuneiform sign indicating her relationship to the king (cf. also queen no. 7). It seems unlikely, however, that this royal couple, like the preceding pair, was given the designation "kings," as the translation of Del Monte (1997: 248) suggests. In this document the king's throne-name Arsakes is followed by the expected title "king" (LUGAL): the titulature was clearly different from that of the earlier one. Wholly uncertain, on the other hand, is whether we are dealing with a wife or with a queen-mother¹⁶. She could be either. Nor can this mutilated text shed light on yet another problem — whether the king is Phraates II or a successor. A change of queen, unless she is beyond doubt a new queen-mother, does not necessarily mean a change of king¹⁷; she could be a dif-

tain; see van der Spek 1997/98: 173. Most likely these events occurred not long after the defeat and capture of Demetrios II, known to have taken place in July/Aug. 138 (*AD* No. -137A 'Rev.' 8'-11'). At any rate the account of Justin 38.9.4-9, although not a problem-free narrative (see Mittag 2002), points to the elapse of a number of years between Phraates' accession and 130-129, the expedition of Antiochos VII against Parthia.

¹⁵ Minns 1915: 39; accepted, for example, by Debevoise 1938: 29; Wolski 1993: 83; Simonetta 2001: 76 and Gaslain 2003: 106 n. 45. Assar 2003: 186 n. 25 (cf. Assar 2004: 88 and see now Assar 2006: 95-98) also depends heavily on the regency hypothesis for his dating of Phraates' accession to c. 132, as seemingly does Dabrowa 2005: 73 n. 1 (without stating this explicitly). Neither scholar refers to Justin 38.9.4-9 (on which see the preceding note).

¹⁶ Cf. the translation of Del Monte 1997: 248. It seems much less likely, since these documents probably record principal queens (see 3.4), that either she or queen no. 7 is a royal daughter. However, we know virtually nothing about the daughters of Parthian kings. Literary sources indicate little more than the marriage partners of some of them and we have no documentary evidence (either Babylonian or Greek).

¹⁷ Pace McEwan 1986: 93. Our documents allot at least two, and probably three, different queens in successive years to Phraates III (see 2.1.5 and 2.1.6-7). Nor does the appearance of the same queen in successive years necessarily mean that the ruler is the same; cf. below n. 24.

ferent spouse of one and the same monarch. Yet we cannot be sure that Phraates was still alive. Shortly after his victory over Antiochos VII (in 129), he was killed, so Justin (42.1.1-5) informs us, in a campaign against the “Skythians.” The exact date of his death is unknown, although quite possibly it preceded our document¹⁸.

2.1.3-4 The remaining five queens of the cuneiform sources belong to the first century. Two (nos. 3 and 4) appear in the roughly fifteen years which follow the death of Mithradates II, i.e. the years after 91/0, for details provided by the astronomical diaries make it almost certain that Mithradates died in the later months of 91, not, as has often been claimed, in 88/7¹⁹. The period is again one of confusion — of conflict, among other major issues, between rival Parthian kings. For two of the contestants some documents supply (contrary to custom) a personal name, as well as throne-name, quite possibly to distinguish each from a competitor²⁰. One of the two is Gotarzes (I), the immediate successor in Babylonia of Mithradates II and also, as is now clear, his son²¹. The other is Orodes (I), given this name in documents of the year 80²².

¹⁸ According to Justin 38.10.10, Phraates took as a wife a daughter (aged c. 14) of Demetrios II, captured on the defeat of Antiochos and not heard of again. The marriage must belong to c. 129. But this does not assist with the problem of the identity of the king in April/May 128.

¹⁹ See *AD* 3 No. -90 ‘Obv. 31’ and Del Monte 1997: 169-170; cf. also Haruta 1998, and Assar 2000: 2.2. I make almost no allusion to the coinage of this poorly documented period (one extending to c. 55); for bibliography see Mørkholm 1980: 33-34 n. 3, and Simonetta 2001: 69 (who does not, however, refer to the important contributions of Oelsner 1975; Oelsner 1986, or Del Monte 1997). The coins do not on the whole provide absolute dates and there has been insufficient discussion of them in relationship to up-to-date versions of the non-numismatic evidence.

²⁰ As suggested, for example, by Debevoise 1938: 49-50 and McEwan 1986: 93. Cf. also the unusual use of personal names on some coins of Mithradates III and Orodes II, the rival sons of Phraates III (Sellwood 1980: Types 41.1, 41.17 and 48.17).

²¹ See the references in the first sentence of n. 19. Like all successors of Mithradates in cuneiform texts until the sixties, his title is “king,” not “king of kings,” the title of Mithradates from 109 onwards (Del Monte 1997: 250). He appears with personal name in *AD* 3 No. -90 Lower edge (second half of SE 221 [91/0]; incomplete formula), in *AD* 3 No. -87C ‘Rev. 31’ (SE 224 [Feb./March 87]; a reference, not a formal date), and (with queen) in the documents listed in n. 8.

²² The earliest (without queen) is dated April 10/11, 80 (SE 232); see *AD* 5 No. 25 (listed as *LBAT 1445), although the reading LUGAL LUGAL^{mes} (“king of kings”) in Obv. 2 seems uncertain. Oelsner 1975: 41 n. 47 argues for “king;” cf. Del Monte’s reading (1997: 254), and, for the use of the two titles, above n. 21. A downgrading of the title

While much about the kings of this period is entirely uncertain (see Appendix I), what is known of the two queens is relatively straight-forward. In addition, since both of them appear in multiple documents, their names can sometimes assist with difficulties posed by the kings. The first of the two, Asi'abatar (no. 3), is the wife (DAM) of Gotarzes. Her name (along with the personal name of the king) is included in documents dating from March 90 to 87/6 (see n. 8). Ispubarza (no. 4), the second of the pair, is the wife of Orodes. She is designated interestingly not as a wife, but as a sister (NIN) and appears in texts dating from Oct. 5, 80 to 76/5²³. Moreover, despite the absence of her spouse's personal name after Oct. 80, her name and the epithet "sister" certainly make it likely (although they do not prove) that Orodes ruled until 76/5 at least²⁴.

2.1.5 With Piriustana (no. 5), another royal wife, we come to the years 69/8 and 68/7, and again to a problem with the identity of the king²⁵. To be sure, most scholars assume that this is now the reign of Phraates III, for it is widely believed that Phraates' accession (and his father's death) belongs to c. 70/69, a view based primarily on statements of the Greek chronographer Phlegon (*FGrHist* 257 F 12.7)²⁶. Some, however, date the change of

from "king of kings" to "king" would be surprising for any monarch. The personal name Orodes was also originally included in AD 3 No. -79 'Rev.' 10' and 12' (80; incomplete formula). Cf. (with queen as well) the first document of n. 9.

²³ See n. 9. It is also certain now that Ispubarza is the queen of Sinatrukes' predecessor Orodes I, not of Sinatrukes, as Minns 1915: 39 n. 50 believed. In addition, Gotarzes in SBH 51 (n. 8) has one queen (Asi'abatar) not two, as suggested by Minns 1915: 34 (h) with n. 23; see Oelsner 1975: 42 and Del Monte 1997: 251 and 253. Both suggestions of Minns have been widely accepted by scholars; e.g. by Wolski 1952/53: 64-65; Chaumont 1971: 153 and 163, and (for Gotarzes' reign) Gaslain 2003: 108 n. 58.

²⁴ As Oelsner 1975: 38 and Del Monte 1997: 255 believe. However, a new king before 76/5 (who would have to be a brother or half-brother) is not entirely out of the question; cf. in the Seleukid period Kleopatra Thea, married in succession to Demetrios II and to his full brother Antiochos VII, and Kleopatra Selene, married first to Antiochos VIII, then to his half-brother Antiochos IX.

²⁵ Oelsner 1975: 37 Table 1, assigns Piriustana to Sinatrukes (father of Phraates III). In his later account (1986: 278) he gives her to Phraates; cf. Del Monte 1997: 256 (without reference to the problem of the king's identity).

²⁶ On the sources see, for example, Karras-Klapproth 1988: 135-137 and 162-163 n. 1 and n. 3. Memnon (*FGrHist* 434 F 1.38.8) supports Phlegon's dating. However, Appian *Mith.* 104 may put the change of ruler closer to 66 than to 70/69; Cass. Dio 36.45.3 certainly does (confusion in both authors could easily have occurred if their sources referred to the king of the preceding years merely as Arsakes). The coins of the period (see Waggoner 1974, and Mørkholm 1980) do nothing to solve the problems; attribution and dates

monarch to 68/7. This is the year supplied by the poorly preserved inscription on an ostrakon from Nisa (Nisa no. 2640 [Nova 307]), which quite possibly does not refer to Phraates at all. If it does, it leaves the Babylonian documents with queen's name to be explained, as well as the evidence of Phlegon²⁷. The preferable date for Phraates' accession is c. 70/69, the one generally accepted, one with which all the major sources can be reconciled²⁸. According to this view, Piriustana will be a wife and queen of Phraates III.

2.1.6-7 The two remaining royal women (nos. 6 and 7) are certainly queens of this king, for the Greek and Roman sources make it clear that Phraates controlled Babylonia and the western parts of the realm from at least 66 onwards²⁹. Queen no. 6, in a document of 66³⁰, is the king's

are very uncertain. If the details in Phlegon are accepted, Piriustana cannot be a wife of Phraates' father, or one of father and son in succession, as, for example, Stratonike in the preceding dynasty, wife successively of Seleukos I and of his son Antiochos I (her stepson). She is also unlikely to be the queen of a rival of Phraates in Babylonia in the years in question. If this had been the case, we would have expected some hint of such a rival in the literary sources.

²⁷ Chaumont 1971: 161-164, who discusses all the non-numismatic sources (but not the cuneiform document of 69/8), argues that the ostrakon alludes to the accession of Phraates. Lukonin 1983: 687-688, Bader 1996: 264 and others believe the same, but make no reference to the other evidence. According to the editors, the ostrakon reads 'ršk MLK' [B](RY *npt pry*)*ptk*, "king Arsakes, great-grandson of Friyapātak" (assumed to be king Priapatius c. 191-c. 176). However, the text, the meaning of BRY *npt*, and the identity of Friyapātak are all problematic (cf. Frye 1984: 209). The allusion could be to a usurper, possibly a brother or cousin of Phraates, who seized power in the east after Phraates came to the throne. (Alternatively, if we assume that the reference is to Phraates himself, the ostrakon could point to an accession in Nisa delayed by one or two years by a rival in that area.) A rival in the east might well have been unknown to the literary sources.

²⁸ Lucian's statement (*Macr.* 15) that Sinatrukes ruled for seven years, although not the strongest piece of evidence, will also be in harmony with this, i.e. if Sinatrukes' accession is dated to c. 78/7 (cf. App. I).

²⁹ Cass. Dio 36.51.1-37.15.1 (on 66 and the following years) refers repeatedly to Phraates by name; cf. App. *Mith.* 104 and 106 and also Plutarch *Pomp.* 38.3 (the unnamed king is clearly Phraates; cf. Dio 37.6.1-2). On the other hand, the allusion to Pompey's negotiations with the "kings of Elymais and Media" (Plut. *Pomp.* 36.2), and his claim to have conquered Dareios the Mede (Diod. Sic. 40.4 and App. *Mith.* 106 and 117), suggest that Phraates did not have full control. For discussion of these and other similar references see Heftner 1995: 258-259.

³⁰ The king's title here, linked no doubt to military successes, is "king of kings," not as in the preceding years "king;" cf. LBA 1183 Rev. 13-14 (64/3; Del Monte 1997: 257) and AD 3 No. -62 'Rev. 4' and Upper edge 1 (63/2). Cf. also Plut. *Pomp.* 38.3 and Dio 37.6.1-2.

mother (AMA-šú), the second securely attested queen-mother of our series of documents. However, her name, which occurs in this text alone, is preserved only in part. Even more defective is our evidence for the final queen (no. 7). She appears in a very fragmentary astronomical diary for 63/2, clearly, as with her six predecessors, in the dating formula. However, only the words “and Teleonike” remain. The reference to the king is missing and likewise the epithets accompanying the queen’s name, although she is almost certainly another royal wife³¹.

2.2 The Greek Documents

Like the cuneiform texts, the two Greek parchments from Avroman, both of them contracts of sale of land, preserve in their dating formulae the names (again seven) of queens not mentioned elsewhere. The names, the dates and the relevant portion of each document, are as follows, text and translation being those of Minns (1915):

8. Siake. 9. Aryazate-Automa. 10. Azate. Avroman I lines 1-6. Year 225, month Apellaïos [Nov. 88]. “In the reign of the king of kings (*basileuontos basileōn*), Arsakes, the benefactor, the just, the manifest and the philhellene, and of the queens (*basilissōn*), Siace his compaternal sister and wife (*tēs homopatrias autou adelphēs kai gunaikos*), and Aryazate surnamed Automa, daughter of the great king (*basileōs megalou*) Tigranes and his [Arsakes’] wife, and Azate his compaternal sister and wife...”
[unknown king]

11. Olenneieire. 12. Kleopatra. 13. Basierta. 14. Bistheibanap-. Avroman II lines 1-3. Year 291 [22/1]. “In the reign of the king of kings, Arsakes, the benefactor, the just, the manifest, and the philhellene and of the queens (*basilissōn*), Olenneieire, Cleopatra, Basierta, Bistheibanaps...”
[Phraates IV]

The parchments, unlike the cuneiform documents, bear a single date. This is generally believed to be the year according to the Seleukid era (in its Macedonian version; i.e. calculated from Oct. 312), not that of the Arsakid era (which began in April 247). Avroman I, therefore, belongs to

³¹ There is no reason to reject her (with McEwan 1986: 93 and n. 44) as a queen of Phraates. Moreover, she is surely not a queen-mother, as this would imply an unattested usurper in Babylon (improbable in this year, as earlier in the decade; cf. n. 26 [end]). On the unlikelihood that she is a royal daughter see n. 16.

Nov. 88 and Avroman II (no month is given) to 22/1³². As well as the year, the dating formula includes, as is normal, the monarch's throne-name, not personal name, to which is prefixed the title "king of kings." In accordance with Greek tradition, a series of grandiose epithets similar to those found on coins follows the throne-name³³, after which come the names of the queens, two of them (nos. 8 and 10), like queen no. 4, sisters of the king. As for the names of the two rulers, there is no difficulty with the later one, the monarch in 22/1, for he must be Phraates IV. Scholars, however, disagree over the identity of the Arsakes of 88, although most probably he is a rival claimant to the throne in competition with Gotarzes I (see App. I).

2.3 Reasons for the Inclusion of Queens' Names and Related Issues

Before we leave this initial review of the evidence for the fourteen queens, one or two additional matters are worth considering. Why, for example, do they appear in documents at all? From where did the scribes derive their information? Also, to anticipate the discussion of titulature which will be given in section 3, why does the first cuneiform queen have such an unusual title?

2.3.1 To include the name of a woman as well as that of the king in an official date, if we may begin with the first question, is not a custom of Neo-Assyrian or Neo-Babylonian times. Nor do we meet it during the Achaemenid era. It is, however, a Hellenistic practice, or rather one well-attested in Ptolemaic Egypt from the period of the regency of Kleopatra I

³² See Minns 1915: 37-38 and Wiesehöfer 1996a: 120-121. The Babylonian documents, on the other hand, employ the Seleukid calendar in its Babylonian version (it began in April 311). Those who believe (with Debevoise 1938: 47 n. 70 and Haruta 1998) that the parchments also employ the latter version, date Avroman I to Nov. 87. The 3rd Avroman parchment is in Parthian and dates to AD 53; see Wiesehöfer (*loc. cit.*).

³³ For the epithets cf. also the prescripts of a number of Greek parchments of Parthian times (from AD 87 onwards) from Doura-Europos (Welles 1959: nos. 18-20, 22 and 24), prescripts very similar to the Avroman ones, but with both Arsakid and Seleukid dates and without queens. In addition, epithets 3 and 4 appear in the partially preserved dates of two Greek inscriptions of the reign of Mithradates II from Babylon (*SEG* VII no. 39 [111/0] and no. 40 [122/1]). Such labels are not found in the dating formulae of cuneiform texts (Parthian era). These are influenced by Babylonian conventions and differ from the Greek ones also in other ways, including position (in legal documents) at the end of the document, not the beginning, and the order in which the items are presented.

(180-176) onwards³⁴. No examples of it from the Seleukid world are known, although this does not necessarily mean that it never occurred. Our documentation for Seleukid administration in general is sparse: virtually nothing, for example, remains of the extensive parchment or papyrus records (in Greek or in Aramaic) of the bureaucracy of this period in Babylonia³⁵. Could there not have existed Seleukid documents, dated by both king and queen, which have not survived, but whose dating method influenced the second century scribe of our first two cuneiform texts³⁶. Alternatively, is it not possible that the presence of a female name in this period of very great confusion is due to a misunderstanding?³⁷ Did the scribe, on learning the identity of the king and his spouse, mistakenly insert both in the date? The confusion of the times could also explain the strange title “kings” instead of “king” and “queen” in our first document. The scribe, unaccustomed presumably to including a queen in the date of a cuneiform text, and uncertain about her title, perhaps took refuge in the cuneiform formula normally used during a Seleukid co-regency; see, for example, the year 189 (SE 123), dated by “Antiochos [III] and Seleukos kings” (AD 2 No. -188 obv. 1)³⁸.

³⁴ See, for example, Hazzard 2000: 125-130 on documents dated by Ptolemy VI and Kleopatra I and, in the years 170-145, by Ptolemy VI and Kleopatra II. For Babylonian dating formulae in the Achaemenid period see Boiy 2002: 243-245.

³⁵ Kuhrt 1996: 42. Clay bullae bearing seal impressions tell us something of them; see Wallenfels 2000; cf. also Invernizzi 2003 and Oelsner 2003: 294-296.

³⁶ Is it impossible, for example, that Kleopatra Thea's name was included with that of the king in documents in Greek of the 130s or earlier? Daughter of Ptolemy VI and Kleopatra II of Egypt, married successively to three Seleukid kings, and a queen from 150 to 120, she is the first Seleukid royal woman to be named as well as portrayed on coins; see Meyer 1991/92: 114-123 on the Ptolemaic-influenced coins of 150-145 and of the 120s. That there were individuals (possibly Babylonian scribes) capable of translating Greek formulae into cuneiform is suggested, for example, by the Graeco-Babyloniaca tablets (see Sherwin-White/Kuhrt 1993: 160-161 and Geller 1997), which present cuneiform texts along with a Greek transcription, and which are dated by Geller 1997: 49 from about the 1st century BC onwards.

³⁷ Del Monte 1997: 244-245 and n. 462 notes peculiarities in this scribe's rendering of the dating formula in a number of other documents.

³⁸ Or was the misunderstanding based on a Greek formula? In a number of Ptolemaic documents the plural participle *basileuontōn* is followed by the names of king and queen (e.g. SB 16 no. 12373.1 [158] or SB 14 no. 11475.1 [145/4]). In other documents from the early 2nd century onwards king and queen are referred to as “kings” (*basileis*); see the letter of Zeuxis of c. 196 to Herakleia under Latmos (Wörle 1988: I N II line 10 and n. 119).

2.3.2 There are of course other possible explanations for the names of queens in dating formulae. They could reinforce, for example, the king's claim to be the legitimate ruler³⁹ or demonstrate his influence. These are certainly plausible reasons in the eighties, when rivals were apparently competing for the throne (see App. I). They are plausible, too, for Phraates IV in 22/1, for the preceding years had involved him in a major contest with a usurper (Tiridates). Indeed, Phraates was initially driven from the realm (Justin 42.5.4; Cass. Dio 51.18.2 [related under the year 30]), to be restored only by Skythian aid (Justin 42.5.5). If we accept Dio's version of the events of the following years (53.33.1-2), Phraates could not have felt secure until at least 23, if he could feel secure even then⁴⁰. Avroman II with its four queens (and no doubt other documents like it) perhaps advertises that the rightful king is in full control⁴¹.

2.3.3 Whatever the reasons for the presence of queens' names, they surely derive from some official source. We have ample evidence that the Parthian monarch, like the Seleukid one before him, communicated regularly in writing with the officials in Babylonia and with the citizen body, and that public announcements of matters felt to be of significance were a normal practice⁴². The appointment of army commanders and senior administrators, it is clear, was one of the items often reported⁴³. Information about the identity of important members of the court, including the queens, could also have been disseminated in this way.

³⁹ Cf. McEwan 1986: 92. For this as the possible reason for the inclusion of Mousa on her son's coins see Bigwood 2004: 61.

⁴⁰ Since Dio and Justin conflict on a number of points, the exact course of events is unclear; see Timpe 1975 and PIR² 6, 1998: P no. 395.

⁴¹ Given the increasing scarcity of cuneiform documents, particularly from c. 70 onwards, we do not know how often queens were included in the date, or indeed when the practice ended, although this may have been in the early 1st century AD.

⁴² On the communication of information in the Seleukid period see Kuhrt 1996: 53. Van der Spek 2001, comments on references in astronomical diaries (mostly of Arsakid date) to communications from the king which were read to the Greeks of Babylon and (separately) to the Babylonian community.

⁴³ See, for example, AD 3 No. -134B Obv. 16 (135); AD 3 No. -119C 'Obv. 11'-12' (120).

3. The Titles and Ranking of Parthian Royal Women

In the Greek and Roman literary sources which have come down to us Parthian queens rarely have a name and never a title⁴⁴. They are merely “wives.” In our documents, however, each has a title (or would have had one, it may be assumed, if the references had been complete), and it is of interest to compare the terminology (Greek and Babylonian) with that applied to the Seleukid queens. We need to look, too, at what is known of the titles given to women of high standing in the Parthian language, for this provides a little additional evidence for differences of status among the women of the Arsakid court.

3.1 *The Queen’s Title in the Greek Documents*

In Greek the title is on the whole straightforward. In the two Avroman parchments all the queens are styled *basilissa*, the title employed for the wife of the king in the Hellenistic world in general⁴⁵. In Hellenistic states it is a designation of royal status, one which does not necessarily involve political power, and presumably had similar implications in Arsakid times. The same title, we note, is given to a wife of Orodes II (58/7-c. 39/8) in a third document in Greek of the first century. This is an inscription of Mithradates II of Kommagene (*SEG* XXXIII no. 1215), honouring his sister “queen Laodike, sister of the king [Mithradates II], and wife (*gunē*) of the king of kings Orodes [II].”⁴⁶

⁴⁴ On the absence of Parthian “queens” in these sources cf. Gaslain 2003: 103-104. Note, however, that Josephus, who gives “Thesmoussa” (i.e. Mousa) no title (*AJ* 18.40-44), calls Helene of the “vassal” state of Adiabene *basilis* (*AJ* 20.26; cf. also 20.51 and 20.101 [where the MSS variously read *basilis* and *basilissa*] and Rengstorf I 1973: 317). Cf. at a later date Herodian 4.10.2, where the Roman emperor Caracalla allegedly expresses the wish to marry a royal woman (*basilida*) and daughter of the king.

⁴⁵ From the very end of the 4th century onwards. The most useful discussions of the title are those of Carney 1991, and 2000: 225-228 and 231-232; cf. also Brosius 1996: 18-19. For Achaemenid women of royal status sometimes *basileia* (= “royal woman”) is used in Greek literary sources. For this term and the others (Greek, Babylonian and Elamite) applied in the sources to this group see Brosius 1996: 18-31 and Henkelman 2000: 497-498.

⁴⁶ First published by Wagner 1983: 208-212; cf. Cass. Dio 49.23.4 (without name or title). For *basilissa* cf. the title of Thalassia, wife of the king of Mesene/Charax (in the 120s), in a recently discovered inscription (Gatier 2002: 223-226). Cf. also the coins of king Kamnaskires III of Elymais, where queen Anzaze appears with name and title (Alram 1986: nos. 454 and 455 [82/1-76/5]).

In the Hellenistic world, besides the wife of the king, royal daughters were sometimes called *basilissa* (although we have no evidence for such a use of the term in the Parthian empire)⁴⁷. This is also the title of a number of queen-mothers, most of them probably awarded it during the reign of a husband⁴⁸. In the Arsakid empire it is the designation of Mousa, wife of Phraates IV, at least in the period when she was queen-mother. The tetradrachms and drachms of her son Phraatakes, i.e. those which carry her portrait on the reverse and date from c. AD 2 to c. AD 4, all call her “queen.”

The earlier Avroman parchment with its inclusion of the word “wife” (*gunē*) with each queen shows that all three were at the time wives (cf. the Kommagene inscription referred to above). Avroman II does not state this specifically, although it is likely that all these queens too were wives. If this had not been the case, if the quartet, that is, had included the mother of the king, or a daughter, we would have expected the text to have made this clear. Moreover, the Avroman documents provide additional information of significance. They demonstrate that a king could have multiple wives with the title “queen,” presumably in addition to any concubines that he might possess⁴⁹. But this is not what the Greek and Roman literary sources suggest. They tend to emphasise concubines, notoriously for the west a symbol of oriental decadence, at the expense of wives. In addition, when they allude to the spouses of specific members of the royal family, they normally write of one wife, or of one wife and concubines. Indeed, in Justin’s account of the reign of Orodes II (42.4.2-16), with its discussion of which

⁴⁷ The title was certainly so used in Ptolemaic Egypt; see Carney 2000: 226, who argues (226-227), that it would have been used for royal daughters at other Hellenistic courts as well (cf. Brosius 1996: 19). On our lack of information about Parthian royal daughters see n. 16 above. The term *basilis* in Herodian 4.10.2 (above n. 44) does not prove that this title was actually used in Parthia for daughters of the king.

⁴⁸ Kleopatra Thea has this title on coins as wife of Alexander Balas, in an inscription as wife of Antiochos VII, and also later on coins as queen-mother; see Bigwood 2004: 52-53, where other numismatic examples of queen-mothers with the title, including Mousa, are also given (*ibid.* 56-57).

⁴⁹ For those of Phraates IV see Isidore of Charax (*FGrHist* 781 F 2.1 p. 780 lines 3-4) on the concubines whom Phraates put to death on the advance of Tiridates (above 2.3.2). However, it is not certain that all were in fact concubines; cf. Timpe 1975: 160, who raises questions about the date and their status. Phraates’ concubines also included Mousa (Josephus *AJ* 18.40 and 18.44), who must have arrived in Parthia c. 20 or a little earlier (see Bigwood 2004: 39-40), and whose first years as a royal concubine must have overlapped those of at least some of the queens of Avroman II.

of the remaining thirty sons is to inherit the throne (14-16), we meet concubines alone (15), no wives at all. Yet, as we know from the combined testimony of Dio 49.23.4 and the Kommagene inscription, Orodes had at least one legitimate marriage partner (queen Laodike) and probably more, and at least two sons by her. Clearly the literary tradition can be misleading on the question of the identity and status of the important women of the Parthian court⁵⁰.

3.2 *The Queen's Title in the Cuneiform Documents*

As far as the Greek documents are concerned, the Arsakids adopted for their queens the title used in the Seleukid empire. In the cuneiform texts, however, the terms applied to the royal women of the two dynasties are not identical. Hence we need to look briefly at how they are described in both eras.

Unlike the references of Parthian times, those to the Seleukid queens, although few in number, show some variety. More often than not, the queen is described (sometimes, though not always, along with her personal name) merely as the king's wife (DAM = *aššatu*) without a title⁵¹. On three

⁵⁰ In 41.3.1 Justin acknowledges that it was Parthian practice to have a number of wives (*uxores*). In his narrative, however, he ignores this. For single royal wives (without reference to other women) see Justin 38.10.10 (the wife of Phraates II; cf. above n. 18); Strabo 16.1.28 (the two wives of two of the sons of Phraates IV); cf. also (from the 1st century AD) Tac. *Ann.* 11.8.2 and Cass. Dio 62 (63.2.3). For one wife plus concubines (1st century AD) see Josephus *BJ* 7.247. Some of these single wives may be principal wives (cf. below n. 77), although no doubt it was not obligatory to have more than one marriage partner. For royal concubines (without reference to wives) see Plut. *Crass.* 32.6, where the term *hetaira*, used in connection with the parentage of Arsakid kings, is surely derogatory (cf. in the same work the double allusion [21.7 and 32.5] to the concubines of the Parthian noble Surena); for those of Phraates IV see n. 49 above; cf. (for the 1st century AD) Tac. *Ann.* 6.43.1 and 12.44.2. For emphasis on concubines see also Lucan 8.397-411, where "*coniunx*" (400 and 411) must mean "concubine" (cf. *OLD* 1c); on the unreliability of this passage see n. 88 below. All the women alluded to in this note are nameless.

⁵¹ Kuhrt/Sherwin-White 1991: 78 n. 29 give some of the references. They point out, too, that MÍ.É.GAL, "woman of the palace," is the usual description of the principal wife of the king in Neo-Assyrian times (cf. Melville 2004: 38 and 43-47), and that its equivalent, SAL ša É.GAL, occurs in Babylonia in the Achaemenid period; cf. for Achaemenid times Brosius 1996: 26-31, who notes, in addition, a Babylonian allusion to the wife of the king as "the king's wife," and some references using personal name alone. For the mother of the king, at times mentioned in Neo-Assyrian or Neo-Babylonian texts, and referred to as "the king's mother," see Brosius 1996: 22-24 and Melville 2004: 38 and 52-53.

occasions, however, a title is given, in each case an unusual one for a royal woman of the first millenium.

The earliest is the reference to Stratonike, wife of Antiochos I, in the Borsippa cylinder of 268. As Kuhrt and Sherwin-White (1991) point out, this is a remarkable allusion both for the fact that the queen is mentioned in a building inscription, as well as for the terminology employed⁵². Stratonike is named, described as the king's consort (the old-fashioned term *hīrtu* is used) and, in addition, given the title *šarratu* ("queen"), written syllabically (Col. II 26-27). Like *hīrtu*, this term is more often used of deities in the first millenium than queens. For Kuhrt and Sherwin-White it means something like "heavenly queen."⁵³ However, before a decision is reached on its exact significance, we need to look at the two remaining references to Seleukid royal women.

In both of these (both occur in astronomical diaries) the queen's title is indicated by the logogram GAŠAN, which can represent either *šarratu* ("queen") or *bēltu* ("lady"), another term often applied to first millenium goddesses⁵⁴. Del Monte (1997: 41) has suggested that it represents the latter. However, quite possibly it stands for *šarratu*, given that in one passage, the account of the year 254/3, the reference is again to Stratonike. Here the diarist reports the death of the queen, now queen-mother, although nothing at this point indicates her relationship to the king. Her name is followed merely by GAŠAN — in one version of the passage (AD 2 No. -253 B₁ Obv. 6'). In a duplicate version, where the text is damaged, the editors suggest the reading M[Í.LUGAL...] "woman of the king" (A₁ 11; A₂ 3'), although how the two versions are to be reconciled is left unclear⁵⁵.

Even more problematic is the second passage, the description of the Parthian takeover of Babylonia in the diary for 141/0 (AD 3 No. -140A Upper edge 2-4). Here we find references to the Parthian king, to a letter

⁵² They provide transliteration and translation, as well as useful analysis. On the significance of the reference to Stratonike see 83-85 and on the terms describing her see 77-78 and 85.

⁵³ Kuhrt/Sherwin-White 1991: 85. According to CAD 17 s.v. *šarratu* 1. a) 4', it corresponds to Greek *basilissa*. On the archaising in the document see Kuhrt/Sherwin-White (*ibid.*) 77-78; cf. also Boiy 2002: 248.

⁵⁴ CAD 2 s.v. *bēltu*. For the double function of the sign see Borger 1978: 144 no. 350 (cf. also n. 61 below).

⁵⁵ In the much earlier diary for 274/3 (AD 1 No. -273B 'Rev. 29') we have a reference to the unnamed and untitled "wife" (DAM) of the king (presumably Stratonike).

(presumably of the king), to an Antiochos (untitled) and to a Laodike, whose name is followed, without any term indicating relationship, by the title GAŠAN. To Del Monte, who believes the queen to be Laodike, wife of Antiochos III, the lines point to a decree of the Parthian king, one ensuring continuation of the empire-wide cult of the Seleukid rulers instituted by Antiochos III⁵⁶. The text, however, which is fragmentary in the extreme, leaves every detail wholly obscure. We do not know which Antiochos and Laodike are alluded to⁵⁷, let alone why they should be named here. Also unconvincing is Del Monte's suggestion that both here and in the report of Stratonike's death GAŠAN implies a cult of the queen⁵⁸. In neither case is there evidence for this. Neither queen, we observe, is called "goddess." In neither passage does the divine determinative (DINGIR) accompany the name. GAŠAN surely should mean "queen," its occasional appearance possibly reflecting attempts to give the Seleukid queen a new and distinctive title (cf. *šarratu* in the Borsippa cylinder), a designation quite different from "wife of the king" and one which corresponded to the Greek title *basilissa*. After all, official communications from the Seleukid court (cf. 2.3) would have been in their original form in Greek, or so one may reasonably assume, whatever language was used to disseminate them in Babylon. Information supplied in them about the queen might well have included her Greek title.

Whether GAŠAN or *šarratu* is included or not, none of the cuneiform allusions to Seleukid queens occurs in the dating formula of the document concerned, as was indicated above in section 1. The context varies. In the Parthian era, however, all seven royal women appear in this very formal part of the text and only there⁵⁹. Not surprisingly, then, we find a much

⁵⁶ Del Monte 1997: 103-105. On the controversial question of whether such a cult was instituted in Babylonia see Sherwin-White/Kuhrt 1993: 202-210, who argue against it, and (for a different view) van der Spek 2000: 438.

⁵⁷ Cf. AD 3: 138, the editor's note on No. -140A Upper edge 4. Oelsner 1975: 29 suggests as possible candidates Antiochos II or Antiochos IV. There is also (in addition to Antiochos III) Antiochos, son of king Ar'abuzana (Ariobarzanes), appointed commander-in-chief in Babylonia earlier in this month (AD 3 No. -140A 'Rev. 7'-8').

⁵⁸ Del Monte 1997: 41 and 104-105. He does not, however, allude to its use as a title for Parthian queens (see below).

⁵⁹ In AD 3 No. -123A 'Obv. 19' (124) Talasi'asu (Thalassia), wife of Hyspaosines, king of Mesene/Charax, is described merely as his "wife" (in the Greek inscription [above n. 46] she is a "queen"). However, this is not a date and she is not a Parthian queen. Boiy 2002, throughout his discussion emphasises the differences between titles given in dating formulae and the terms used in other Babylonian contexts.

greater degree of uniformity and much more frequently a title. Indeed, in the five cases where we have a complete or almost complete description, the sources preserve the queen's name (or part of it), her relationship to the king as wife/sister/mother and her title⁶⁰. For four of the five (all four from the first century, one of them [no. 6] a queen-mother) the title is also unsurprisingly GAŠAN⁶¹, the one occasionally used in the Seleukid era. Moreover, there is nothing in the case of the Parthian queens, any more than with their predecessors, to suggest that the title implies a cult. Surely, as earlier, it is the equivalent of the Greek title, and means "queen," without any implications of divinity⁶².

3.3 *Titles of Women in Parthian*

Before we move from titles to the question of the ranking of the women of high standing, we need to consider briefly the evidence for their titles in Parthian, the language of the court, for this sheds a little light on the hierarchy that must have existed. Our sources here are of course meagre in the extreme⁶³. Indeed, although kings are alluded to in documents in Parthian of Arsakid date, we have no reference to any queen in any text of this period in Parthian. We first meet the word in the succeeding era — in the great trilingual inscription (ŠKZ), set up at Naqš-i Rostam in the third century AD by the second Sasanian monarch Shapur I (c. 240-c.

⁶⁰ According to the version of Del Monte 1997: 254, LBAT 1295 (not yet published in its original form) omits DAM-šú before GAŠAN in reference to Asi'abatar (no. 3). However, according to Minns 1915: 35 (j) and n. 25, everything after the first part of the queen's name is missing; cf. the comments of Oelsner 1975: 40 and n. 43.

⁶¹ The single exception is queen no. 1 in the 2nd century (cf. 2.3.1). However, the double function of the cuneiform sign (see n. 54 above) has caused some confusion among scholars (cf. Debevoise 1938: 48 n. 75). It surely represents the same Akkadian word (i.e. *šarratu* or *bēltu*) in the case of all four women. Chaumont's suggestion (1971: 160 n. 5) that Ispubarza, sister of Orodes I, would have been a "queen" (*šarratu*), but that Asi'abatar (154) and Piriustana (161) might have had the title "lady" (*bēltu*) is implausible.

⁶² This is the meaning assumed in the following pages. It will be remembered here that although some Seleukid and Parthian kings are called *theos* on coins (the former in inscriptions as well), none has a divine title in the cuneiform sources. It will also be recalled that there is no evidence that Parthian queens were called "goddesses," with the exception of Mousa, designated *Thea Ourania* on coins (see Bigwood 2004: 48-52).

⁶³ For a useful brief account of the Parthian language and its Aramaic heterograms see Schmitt 1998: 163-176; cf. Schmitt 2000: 43-65, an overview of Parthian, Middle Persian and other forms of Middle Iranian (with bibliography).

272 AD)⁶⁴. Here “queen” occurs repeatedly in the form MLKTA [= *bām-bišn*] in Middle Persian, the language of the Sasanian court, MLKTE in Parthian and *basilissa* in Greek⁶⁵.

Despite the fact that the actual word is not attested in Parthian during the Arsakid centuries, there is no doubt that the title existed in this period. Moreover, “queen” was seemingly not the only title awarded to Parthian women of high rank. There is some evidence for a second one. In the collection of economic documents from Nisa, for example, texts which date probably to the first century BC, we find instances not only of the designation “lord” (MR’Y), but also of the corresponding term “lady” (MR’TY)⁶⁶. In one document (Nisa no. 2634 lines 2-3) the latter accompanies a personal name (*pšH* MR’TY = “the lady Paš”), the only female name found so far in the Nisa texts.

Bader (1994: 270), making a brief reference to the term “lord” in Sasanian times, has suggested that the allusions of the Nisa collection could be to “middle-level” nobility, and possibly this is the case, at least in regard to Nisa no. 2634. Certainly “lord,” in the form MR’Y, is used in some western regions in Arsakid times as a specific title for local rulers of lower rank than kings⁶⁷. Moreover, a Greek version of this title (i.e. *kurios*) occurs elsewhere on coins. It appears in the masculine as KYPI(O)Y (genitive) on issues of Arsakid type from central Iran, issues belonging to an

⁶⁴ Huyse 1999, provides text, translation and commentary, with a list (I 21) of earlier editions and translations. For recent discussion of the three versions of the inscription see also Rubin 2002: 267-297.

⁶⁵ For the text references see the Middle Persian index (Huyse 1999: I 78) under MLKTA. In what follows I supply in most cases the section numbers in Huyse, and not line numbers. Names are given in the form in which they appear in Huyse, except for Shapur and Ardashir, spelled in the normal English fashion.

⁶⁶ For “lord” see Nisa nos. 2644 (cf. MR’N in 2643), 2644a, 2646, 2658; cf. Bader 1996: 270, who also refers to an unpublished document from Gjaur-kala (cf. Livshits/Nikitin 1994: 317 no. 11), which supplies a personal name and title written phonetically, not heterographically, as in the Nisa texts. For “lady” see Nisa nos. 2634, 2644, 2645 and Bader (*loc. cit.*). For the meanings of the Aramaic terms see Hoftijzer and Jongeling 1995: II s.v. *mr’*. They can be general words meaning “lord”/ “master” and “lady”/ “mistress,” applicable to any superior (royal or non-royal) irrespective of his or her status, as well as titles denoting a specific status, or (although only in the case of the masculine) a specific office.

⁶⁷ E.g. at Hatra in the 1st half of the 2nd century AD, the period before kings appear (see Hauser 1998: 500-503 and 510-512 and Sommer 2003), and in Assur between the 1st and early 3rd centuries AD (see Aggoula 1985: nos. 1, 3, 11, 16).

unknown dynast in the second half of the first century AD. As is even more interesting, we also find the corresponding feminine — in the legend ΠΑΓ-ΓΟΔΗΜΗ ΚΥΡΙΑ (“lady Rangodeme”) on the reverse of coins of her husband (?) Tanlismaidates (untitled), an otherwise unknown chieftain holding sway in East Iran in the previous century⁶⁸.

Later, in Shapur’s inscription both “lord” and “lady” are employed as titles for individuals, the latter (§37) as MLOTA (= *bānūg* MPers.), MRATY (Parth.), *kuria* (Greek)⁶⁹. Of the three women who hold it (§37), two are seemingly close relatives of the king. One of these (*Murrōd) is the mother of Shapur. The other (Narsehduxt), styled not merely “lady,” but “lady of the Sakas,” is most probably the daughter of Shapur’s son Narseh, “king of the Sakas.”⁷⁰

3.4 The Ranking of Parthian Royal Women

The title “lady” in early Sasanian times clearly conferred prestige, although it also denoted a status inferior to that of “queen.” In the preceding Arsakid era presumably the same was true. However, no Parthian document which employs “lady” (or for that matter “lord”) provides information about the exact status of the individual concerned. We cannot then define the group in Parthia to which this title was applied. Indeed, we do

⁶⁸ For the latter coins see Alram 1986: nos. 1269 and 1269A; cf. also Weber 2004 on the name Tanlismaidates. So far as I know, there is no evidence for a Seleukid title *kuria*. For the coins with KYPI(O)Y see Alram 1987: 138-140. The relationship (if any) of each dynast to the Parthian king is not known.

⁶⁹ On “lord” in ŠKZ (MROHY MPers., *hwrtwy* Parth., *kurios* Gk.) see Benveniste 1966: 18-20 and Huyse 1999: II 16-17. This is the title of Sāsān, the eponymous founder of the dynasty (§ 36), of Sāsān lord of Andēgān (§ 42), and of Narseh lord of Andēgān (§ 46). “Lady” occurs in ŠKZ § 48 in the plural *b’nykn* (MPers. line 33; on the form see Huyse 1999: II 119), with the surprising equivalents MLKTEn (Parth. line 27) and *basilis-sōn* (Gk. line 64), i.e. “queens.” The reference here is probably to “queens” (cf. Khurshudian 1998: 98), although as Benveniste 1966: 28 suggests, there is surely a confusion between the two titles. Both terms presumably go back to much earlier times. For the etymology of Middle Persian *bāmbišn* (“queen”), not attested in Old Persian, see Sundermann 1989: 678 and Huyse (*loc. cit.*). Middle Persian *bānūg* (“lady”) has been connected linguistically with *ba-nu-qa(-na-be)* on an Elamite tablet of Achaemenid date; see Hinz 1970: 423 and Sundermann 1989: 678. However, we know nothing about the status of those to whom it was applied at that time.

⁷⁰ Cf. Chaumont 1963: 97 n. 39 (although for Maricq 1958: 334 her genealogical position is unknown). She is omitted in the Parthian and Greek versions (Huyse 1999: II 118). The third “lady” (Čašmag) is of unknown family (Maricq 1958: 334).

not even know the complete range of the designation “queen,” whether, for example, it was given to all official wives, or whether (a question alluded to earlier) it could be a title of royal daughters⁷¹. Nor do we have information about additional titles for royal Parthian women, although some may well have existed⁷². Yet, despite the problematic evidence, one or two comments are worth including here on the ranking of the women closely associated with the king, comments that draw on all the sources, Greek, Babylonian and Iranian. The hierarchy of course will not be the one that we meet in the third century AD in Shapur’s inscription, with its “queen of queens,” “queen of the empire,” “queen” (without qualification), “lady,” “princess” and further subdivisions of some of these categories⁷³. The Parthian system of the first century BC that we are considering was no doubt less complex, but it was, nevertheless, a hierarchy.

On the lowest rung would have been the royal concubines. Although referred to repeatedly in the Greek and Roman literary sources (cf. 3.1 and n. 50), almost nothing is known of them⁷⁴. But they would not normally, one suspects, have become “queens.” Mousa, originally an Italian slave-girl and later given this title, may well have been an exception. At any rate, we should observe the status of two women of the final period of Parthian rule who are later found at the Sasanian court and are named in Shapur’s inscription (§41). One is Dēnag, said to be “mother of king Pābag” (father of the founder of the empire, Ardashir I)⁷⁵. The second is Rōdag, described as “mother of Ardashir, king of kings.” While they receive the honour of being mentioned in the inscription, both lack a title. Their status, if it is

⁷¹ See section 3.1 above with n. 47. In ŠKZ Ādur-Anāhīd, daughter of Shapur (§ 32 and § 36), is called “queen of queens” (cf. also Dēnag, sister of Ardashir I [§ 42]), a form of the title unattested before the Sasanian era (and one which does not necessarily involve a marriage relationship with the king of kings; see Huyse 1999: II 107).

⁷² E.g. “princess,” which appears in ŠKZ § 37 as *dwhšy* (MPers.), BRBYTE (Parth.), *korēs* [?] (Gk.). For this title see Huyse 1999: II 121-122, and for the Middle Iranian form cf. Elamite *dukšiš* (Huyse 1999: II 122), a term discussed by Brosius 1996: 27-28 and Henkelman 2000: 498.

⁷³ Chaumont 1963: 198-199 rightly draws attention to the hierarchy; cf. also Brosius 1996: 13, arguing for a hierarchy among the royal women of the Achaemenid era.

⁷⁴ They were by no means necessarily of humble origin. On royal concubines in the Achaemenid period (again the evidence is unsatisfactory) see Briant 1996: 289-295 and 946. On those of the Neo-Assyrian kings see Melville 2004: 39-42.

⁷⁵ On her name see Huyse 1999: II 108 and 117. On the question of the historical truth behind the tradition about Pābag see Frye 1989, and Huyse 1999: II 15 and 115.

accurately represented, suggests that possibly both were thought of as concubines (cf. Chaumont 1963: 199).

Above concubines in rank in Parthian times would have been women with the title “lady,” about whom, as we saw, further evidence is lacking. Higher still are those styled “queen,” a title held not only by official wives, but also by some mothers of the king (above 3.1 and 3.2). In the Sasanian period, even though not all the details are agreed upon (Shahbazi 2003: 12: 2), there are clear differences of status among members of this group. Do we have any evidence for differences in the preceding era?

The answer is simple — extremely little⁷⁶. However, the fact that both Greek parchments from Avroman list several queens, while the cuneiform documents present in each case one and only one, is suggestive. The named single queen of the cuneiform texts, it seems likely, is the principal queen, not evidence, as has been claimed, for a monogamous king⁷⁷. Moreover, the inclusion in the cuneiform group of two queens who are mothers of kings (no. 1 in 132 and no. 6 in 66) points in the same direction. Neither of them surely was a regent for an under-age child. As was noted earlier (2.1.1), there is no good evidence that Phraates II was a minor in 132, while Phraates III in 66 must have been in his twenties or thirties⁷⁸. Each of the two queen-mothers would have been in the relevant year the leading woman of the court, ranking higher than any wife.

We know little, however, about what determined a queen’s exact status at any point in her career. A large number of different factors could have

⁷⁶ The account in Cass. Dio 49.23.4 of the beginning of the reign of Phraates IV indicates that his mother (unknown) was of lesser status than the daughter of Antiochos (I of Kommagene; cf. 3.1). But we do not know her rank; she could have been a concubine, as suggested in *PIR* ² 6, 1998, P no. 395 (p. 153), rather than a queen.

⁷⁷ A claim of Wolski 1952/53: 65 in reference to Ispubarza (no. 4) and Piriustana (no. 5). However, in the case of none of the queens or wives of our sources (apart from the Avroman queens) do we have evidence of co-wives in the same year. Hence logically the claim should apply to every cuneiform queen who is a wife (i.e. to no. 3 as well, and probably also to nos. 2 and 7) and, in addition, to each wife of the literary sources; see 3.1 above and the references in n. 50 (for the view that such allusions are to principal wives cf. Shahbazi 2003: 12: 1). The listing of multiple queens in the Avroman dating formulae, on the other hand, may reflect the particular model employed, or the personal preference of the monarch. As was indicated earlier (2.2 and n. 33), the formulae here follow Greek, not Babylonian, tradition.

⁷⁸ His known children, Mithradates [III] and Orodes [II], who succeeded him in 58/7, and a daughter, married to Tigranes the Younger of Armenia in the mid-sixties (Cass. Dio 37.6.4), must have been born in the seventies, if not earlier.

played a role, including the importance of her family, her nationality, the political situation of the time, her age, her personality, the qualifications of the other royal women⁷⁹. One consideration must certainly have had weight at a court where polygamy was practised and where the succession (and all else) was determined by the wishes of the king⁸⁰ — the children whom she bore, particularly the male children and their standing.

The status of a child, however, was not fixed and unalterable. Moreover, some of the other factors which may seem to-day to be of major importance were not necessarily always so. Sisters of the king, for example, since they were close relatives, were no doubt an especially privileged group. In Avroman I, however, although one sibling-queen (no. 8) is listed first, the name of the second (no. 10) comes after that of a foreigner, the daughter of Tigranes II of Armenia (no. 9). The order of names is obviously not governed by biological connection to the king⁸¹. Even more interesting is the question of the standing of the mother of the king. Although clearly at times a significant figure, given that two of them are named in our documents, she did not apparently always have precedence. At the court of Phraates III in 69/8 and 68/7, if my earlier assigning of queens to kings is correct (2.1.5 and 2.1.6), the king's mother (no. 6; the queen named in 66/5), must have ranked after Piriustana (no. 5), the king's wife, whose name appears in the two earlier years⁸². Although they belong to the following era, it is worth mentioning again the three mothers of kings in Shapur's inscription (ŠKZ), for all three seemingly rank below the queens. As observed above (in this section), two are untitled, while the third, Shapur's mother, is merely a "lady" (above 3.3).

⁷⁹ On factors which could influence status see the comments of Greenwalt 1989: 37-40 and Carney 2000: 25-27 in regard to Macedonian royal women.

⁸⁰ See Wiesehöfer 1996b: 60. Moreover, as is clear from the literary sources, only members of the Arsakid family were eligible to become kings, legitimacy depending on the father. There is no convincing evidence of succession via the female line alone, despite what is often said about Artabanos II (c. AD 10-38), e.g. by Schottky 1998: 443-444. The comment in Tacitus (*Ann.* 6.42.3) that he was an Arsakid only on his mother's side is clearly stated to be a slur of his enemies; see Boyce 2000: 157-159.

⁸¹ It could reflect the relative importance of the queen, her age, the date of the marriage or other factors.

⁸² Possibly the queen-mother acquired the title "queen" in the reign of Phraates' father Sinatrukes. However, this is uncertain. On the question of the importance of the queen-mother in the Neo-Assyrian period see Kuhrt 1995: 528. For the Achaemenid period see Brosius 1996: 21-24 and 186-187, who suggests that the queen-mother held the highest position of the royal women.

We should note, moreover, at the beginning of the reign of Phraates III the seemingly rapid turnover of queens — three in the space of six or seven years. Death from natural causes could very possibly have carried off the first two. Nevertheless, the position of principal queen is unlikely to have been a secure one, whether she was the mother of the king or spouse (possibly in some cases mother of the designated heir)⁸³. The king, for whatever reasons, could abandon his original choice of successor. Indeed, many considerations could alter a principal queen's status — the arrival of a new queen, the birth of any potential heir, any change in the political climate internal or external, among other factors.

How some of these possibilities affected individual lives may be surmised from what we know of the court in the reign of Phraates IV. As was indicated above (n. 49), some of the queens of Avroman II (22/1) were surely members of the court when the concubine Mousa arrived. We do not of course know when they became queens, how long they survived or to what extent they were involved in what transpired. Nor, given our almost complete ignorance of the political scene within Parthia, can we be certain of the reasons for the extraordinary events of these years — for Phraates' choice, for example, of Phraatakes, his son by Mousa, as his heir and for the exiling to Rome of four older sons. The tale in Josephus (*AJ* 18.41-42), that all this was due solely to Mousa's scheming, appears simple-minded in the extreme⁸⁴. But whatever lay behind these happenings, the status of all the royal women in this year, as well as that of all the princes, must have been dramatically altered.

4. Marital Strategies

We turn from the meagre evidence for the ranking of the royal women to the question of royal marital strategies in the last one and a half centuries BC. Naturally the strategies adopted were crucial for the survival of the dynasty. They were also of great concern for individual kings as they strove to enlarge the empire and to maintain their control. On this subject our documents considerably expand what we learn from literary sources.

⁸³ As has sometimes been suggested for other dynasties. For the Neo-Assyrian period see Dalley and Postgate 1984: 11 and Kuhrt 1995: 526-527. For the Achaemenid period see Brosius 1996: 187-188.

⁸⁴ For its implausibility see Bigwood 2004: especially 41-42. Both Strabo (16.1.28) and Tacitus (*Ann.* 2.1.2) suggest that Phraates had much more to fear than Mousa.

4.1 One marriage strategy, namely polygamy, was not surprisingly of particular significance, for it had far-reaching consequences for Arsakid policies in general, not merely other marital ones⁸⁵. Its advantages are obvious. It created on the whole an ample supply of candidates for high offices of state and for the throne, although it could also lead to ruinous competition for the latter. It enhanced, too, the ability of kings or potential kings to make beneficial alliances with dynasts both within the frontiers and beyond. Although we do not have exact knowledge as to the scale on which it occurred, there is some good evidence, as we have seen (3.1.), for the practice. The two polygamous kings of the Avroman parchments lend support to Justin's assertion (41.3.1) that it was customary. Indeed, in the parchments there is a third possibly polygamous individual, namely the father of the earlier Arsakes; as the reference to half-sisters shows, the father certainly had children by at least two women. All in all, there is no reason to doubt widespread polygamy of the grand type, that practised, for example, by the Achaemenids, not the modest version of the Seleukid kings⁸⁶.

4.2 Also illustrated by our documents is a second strategy, sibling-marriage, for which they supply three examples⁸⁷. However, it should be noted that the two sister-marriages of the king of Avroman I, being marriages to half-sisters with the same father as the king, are unions of a type permitted elsewhere (in the Greek world, for example; cf. Vêrilhac/Vial 1998: 93-95). The third sibling-marriage, that of Orodes I to Ispubarza (no. 4), may be the same. It is not certain that she is a full sister.

⁸⁵ On polygamy in Macedonia and comparable societies see Greenwalt 1989: 32-43 and Carney 2000: especially 16-18 and 23-27.

⁸⁶ For Seleukid polygamy see Ogden 1999: 117-170; cf. Martinez-Sève 2003: 695. On Achaemenid polygamy see Brosius 1996: especially 35-37.

⁸⁷ Discussed by Bigwood 2004: 44-45, who notes, in addition, the lack of credible evidence for the alleged union of Mousa and her son, and for parent-child marriage in general in pre-Sasanian Iran. For recent comments on sister-marriage (and other forms of endogamy) in some of the leading families of Doura-Europos in the Parthian period (believed by Cumont 1926: 346, to have been influenced by Arsakid practices) see Arnaud 1997, who does not, however, distinguish between half- and full-sibling unions. Several of the marriages are explicitly stated in inscriptions to involve half-siblings; see Cumont 1926: 417 no. 65 and 418-419 no. 68; and Hopkins 1934: 192 no. 537. Despite Johnson 1932: 18 (n. 3) and 31 (mistakenly followed by Bigwood 2004: 45 n. 38), there appears to be no conclusive evidence for full-sibling marriage at Doura-Europos.

Moreover, these three marital alliances, it needs to be emphasised, provide our only secure evidence for sibling-marriage in the Parthian royal family. Although some have suggested that a tale in Herodian (4.10.5) attests its frequency⁸⁸, this passage makes no mention at all of marriage to relatives as close as sisters. It merely alludes in general terms to unions between members of the Arsakid family and surely refers to those between such kin as cousins or uncle and niece, or at least includes such marriages. As for the additional specific sister-marriages that have been alleged⁸⁹, two of these owe their origin to dubious theories of matrilinear succession, not to evidence. After all, when Phraates I (c. 176-171) designated his brother as his heir, not his son, this hardly attests a sibling-union of their father (Priapatius)⁹⁰. We possess no information about any marriage of Priapatius. Similarly there are no grounds for viewing the marriage of queen no. 1 (Ri-[x]-nu) to Mithradates I as a sibling-alliance, one which explains her supposed political influence; in reality nothing is known about her family background, or indeed about her influence (cf. 2.1.1). Likewise to be rejected is the third suggested union of brother and sister, that of Phraates III and Piriustana (no. 5). The cuneiform sources should exclude this possibility, for here the queen, unlike the earlier Ispubarza (no. 4; wife of Orodes I), is described as a wife, not as a sister.

Nor for that matter is there good reason to believe that the sibling-marriages of our documents are, as has sometimes been claimed, Zoroastrian marital alliances⁹¹. Sister-marriage was a strategy practised by many ruling families, Iranian and, in addition, non-Iranian — by the Ptolemies, for

⁸⁸ E.g. Cumont 1924: 57 n.6 and Kornemann 1925: 359 n. 3; cf. Callieri 1981: 97, whose discussion is seemingly accepted by Gaslain 2003: 108-109. The first two commentators also include as evidence Lucan's references (8.404-410) to the alleged unions of Parthian kings with mothers, as well as sisters, part of an account (8.397-411) of their supposedly barbarous sexual behaviour. However, this is hardly reliable testimony for actual marital practices. The context is a fictional speech, in which Pompey is urged not to seek aid from Parthia, and in which the Parthians are depicted in as negative a light as possible.

⁸⁹ By Wolski 1952/53: 65-67, depending here on the theories of Kornemann 1925. For the first two examples cf. also Callieri 1981: 96.

⁹⁰ The coins which give the king the title *Philadelphos*, ascribed by Wolski 1952/53: 67 and Callieri 1981: 96 to Priapatius, are normally now assigned to Artabanos I (c. 128/7-124/3) and refer to his loyalty to his brother; see, for example, Sellwood 1980: Type 20.

⁹¹ E.g. by Boyce 1987: 541. Others who make this claim are listed by Brosius 1996: 46 n. 23.

example, and (although not to the same extent) by the Seleukids⁹². This was after all a useful method of strengthening both ruler and dynasty. Presumably it would enhance a monarch's right to be considered the legitimate king. It would certainly severely restrict the number of rivals who could use descent from, or marriage to, one of the royal women as a basis for claiming the throne. It would also provide the king with a wife whose loyalty was not divided between family of origin and marital family. In Parthia it was adopted surely for dynastic reasons.

4.3 We do not, however, know how often sister-marriage was practised by the Arsakid royal family and we have insufficient evidence to speculate further on possible Arsakid reasons for adopting it. As with all their marital policies, its frequency no doubt varied with the needs of the times. Nor do our meagre sources of information allow us to point to specific royal marriages with family members who were less closely related than siblings. On the other hand, we have good evidence for marriage to non-Arsakids. Clearly, like the Seleukid kings, many of the Parthian rulers of the last one and a half centuries BC sought to strengthen their position by intermarriage with élite families inside or outside their empire.

The literary sources present us with a number of references to such alliances⁹³. In a previous section (3.1) attention was drawn to the marriage

⁹² For Ptolemaic brother-sister unions see Carney 1987, and Ager 2005. Ogden 1999: 124-126 and 134-136 discusses the few known Seleukid examples, although not always convincingly: note, for example, Boiy 2004: 156-157 on the impossibility of successive marriages of Laodike, daughter of Antiochos III, to all three full brothers. The number of securely attested sibling-unions in the Achaemenid royal family is also very limited; Brosius 1996: 45-46 and 65-69 argues that these involved only half-siblings with the same father. On the reasons for royal sister-marriage, which presumably varied according to the dynasty, see Ager 2005: 16-22 and, on the Hekatomnids, Carney 2005: 79-83. Like others, however, the latter does not note that the Hekatomnid sister-marriages might have been unions of half- rather than full-siblings. There is no evidence either way; cf. Vêrilhac/Vial 1998: 94 n.171. On the genetic consequences of next-of-kin marriage see Scheidel 1995 and 1996, and Ager 2005: 9-14.

⁹³ Sullivan discusses those with Kommagene (1990: 196-197), Armenia (283) and Atropatene (298-300); cf. Wiesehöfer 2000: 712-713. For the 2nd century marriages to captured Seleukid royalty (that of Rhodogoune to Demetrios II, and that of Phraates II to the daughter of Demetrios II [cf. above n. 18]) see Dabrowa 1992: 47-48 and 50 and Mittag 2002; on Rhodogoune see also Gaslain 2003: 105-106. The Seleukid policy of intermarriage with other dynasties is commented on by Seibert 1967: 46-71, Sherwin-White/Kuhrt 1993: 126 and Mehl 1999: 18-26. Achaemenid royal marriages from the

of Orodes II and Laodike of Kommagene, known from an inscription as well as from Cassius Dio's allusion (49.23.4). Our documents supply an additional example. The second queen of Avroman parchment I, Aryazate surnamed Automa (no. 9), is a daughter of Tigranes II of Armenia. Regrettably, however, as with all the marriages of our documents, we know nothing for certain about the circumstances which led to it or its date. Tigranes, restored to Armenia as its king in 96 after years as a hostage in Parthia (Justin 38.3.1.)⁹⁴, was clearly already powerful in 88, the year to which the parchment belongs; as Sullivan (1977: 913) has emphasised, he is styled "great king," although the Avroman ruler carefully underlines his own superiority by calling himself "king of kings." The marital alliance may have been part of the latter's attempt to gain support for his bid for the Parthian throne, but it could also have predated this by a number of years.

We lack evidence, too, as to when Aryazate-Automa was given her two names, by whom and why. All the other Parthian queens to whom we can attach a name have one. The name Aryazate, like those of the two sister-queens (Siake [no. 8] and Azate [no. 10]), is Iranian and was possibly given to her on her marriage. Automa, although its derivation is uncertain, may be Armenian (of Iranian origin)⁹⁵. Still, given that the queen's father is identified in the document, she is clearly a foreigner. Can we point to additional foreign queens?

Here it is worth-while looking briefly at what some of the other royal women are called, at the name Kleopatra, for example, which appears in Avroman II (no.12). We know admittedly little about the names of Parthian women in general. Names, too, are by no means a secure guide to standing in society; in the Greek world Kleopatras occur at all social levels (cf. *LGPN* I-IV). Nor are they a reliable indicator of ethnic identity. A name of this kind in the Parthian empire, even in communities where Greek was

reign of Darius I onwards were made only with Persians according to the Greek and Roman sources; see Brosius 1996: 64-82. However, our information is limited to a very few of the royal marriages of this period (cf. Kuhrt 1995: 683).

⁹⁴ AD 3 No. -95C 'Obv.' 5'-7' and D 'Flaké 12' (96 BC); cf. Del Monte 1997: 165-167.

⁹⁵ For the names see Mayrhofer 1974: 207 (Aryazate), 210 (Automa), 211 (Siake), 206 (Azate). Carney 2000: 33-34 discusses the question of re-naming in regard to some of the Macedonian royal women; Brosius 1996: 77-78 and 184-186 argues for the re-naming of some of the Achaemenid royal women.

still in active use⁹⁶, does not necessarily imply Greek or Macedonian origin. It could have been awarded for reasons such as prestige. However, this particular name certainly has a strong and well-known association with a number of the ruling families of the first century BC Near East. Since Parthian queens often came from the highest social classes, the Kleopatra of Avroman II, as Minns (1915: 42) suggested, could well have belonged to one of these dynasties.

The remaining queens listed in this document (Olenneieire [no. 11], Basierta [no. 13], Bistheibanap- [no. 14]), in contrast to the other (non-royal) individuals of the two parchments, have names which are probably non-Iranian⁹⁷. Quite possibly some of them are indeed foreigners. It will be recalled that according to Tacitus (*Ann.* 2.68.1), Vonones I, a son of Phraates IV and for years a hostage in Rome, was related by blood to a Skythian king. Moreover, Phraates' return from exile, it will also be recalled, depended for its success on Skythian aid (cf. 2.3 above). As Olbrycht (1998: 118 and 143-144) has pointed out, Vonones could be the product of a marriage alliance between Phraates and a Skythian chieftain, one which accompanied the agreement to provide assistance. But a further possibility should be noted as well. Vonones' mother was perhaps not only a Skythian "princess." She may have been, in addition, one of the queens of Phraates recorded in Avroman II.

In the list of non-Iranian names we also need to include those of two earlier queens. The partially preserved name of the mother of Phraates III (no. 6), a theophoric one with Ištar, is a common Mesopotamian type⁹⁸. Another of the queens of this king, Teleonike (no. 7), has (like Kleopatra [no. 12]) an obviously Greek name⁹⁹. Whatever their ethnic

⁹⁶ E.g. in Susa (on the Greek presence see Martinez-Sève 2002). In the letter of Artabanos II (in Greek) to this city in AD 21 (*SEG* VII no. 1) the names are Greek, apart from one which is Iranian. Miller 1998: 476-478 comments briefly on the use of Greek and on Greek names at Doura-Europos in the Parthian period.

⁹⁷ See Mayrhofer 1974: 209 n. 25 and his discussion in general.

⁹⁸ Wilcke 1976-80: 86. The name makes it unlikely that Dilmaghani 1986: 222 is right in suggesting that Phraates' mother was a Saka woman.

⁹⁹ I have not found an exact parallel (for the form cf. the adjective *teleodromos*). The name may in fact have been Telenike, attested in its masculine version in many parts of Greece (see *LGPN* I-IV). As Röllig 1960: 376-377 notes, Babylonian scribes sometimes had difficulty with unfamiliar Greek names (for additional bibliography on Greek names in Akkadian see Sarkisjan 2000: 401 n. 1). According to Minns 1915: 39 n. 47, the names Asi'abatar, Ispubarza and Piriustana are possibly Iranian.

background, these two queens are strangely named if they are of Arsakid lineage. Indeed our documents, if taken together, suggest that a very significant percentage of the fourteen queens are non-Arsakids¹⁰⁰. While the daughter of Tigranes is certainly an outsider, there is some reason to believe that six others (two of the queens of Phraates III, plus the four of Phraates IV in Avroman II) are not members of the Arsakid family and are possibly non-Iranian, whether from within the empire or from outside it.

5. Conclusions

The documents that we have been discussing provide information about the Arsakid court in the last one and a half centuries BC that we do not find in the Greek and Roman literary sources. They tell us something of the use of the title “queen,” correcting the impression given by the literary authorities of kings with a host of concubines, but only one legitimate (and untitled) marriage partner. They supply hints about the possible importance at the court of some queen-mothers, and hints, besides, about its hierarchy of women of superior rank. They also significantly increase our knowledge of the marital strategies employed by the kings of this period and of the marriage alliances made by them. In addition, although the presence of women in our texts may well be a reflection of Hellenistic influence, it is also clear that these are by no means Hellenistic queens. Their public role, at least as far as Babylonia is concerned, is noticeably more restricted than that of some of their Seleukid predecessors. Here it is useful to look briefly again at the cuneiform evidence, for we can directly compare what is said about the royal women of the two dynasties and point to obvious differences.

The references to the Seleukid queens, despite the small number preserved, furnish some illustration of the importance of individual members of this group and, in addition, of the importance of the royal

¹⁰⁰ I.e. if it is assumed that the names do not reflect marriages of earlier members of the dynasty with outsiders. Wiesehöfer 2000: 712-713 comments that Greek influence at the Arsakid court in the last one and a half centuries BC was possibly strengthened by the marriages (he lists five) with women from a hellenised or semi-hellenised background (as well as by the presence there of hostages and refugees from similar circles). Kleopatra (no. 12) and Teleonike (no. 7) should perhaps be added to his list.

family¹⁰¹, queen and sons of the king playing a role, as well as the king. We alluded earlier (3.2) to the remarkable inclusion of Stratonike's name in the Borsippa cylinder, and also to the report in the astronomical diaries of the death of this famous queen. In other texts we hear about the land given by Antiochos II to his wife Laodike and to his sons, as well as about the returning of it to the Babylonians¹⁰². At a later date the astronomical diaries comment on the death of, and public mourning for, another queen, Laodike wife of Seleukos IV (*AD* 2 No. -181 Rev. 7-12 [182]). But equally interesting, too, are the records in the diaries of offerings made "for the life of the king," for these sometimes include other family members. Of the three passages in fact which are sufficiently complete to permit a deduction of this kind, one alludes only to the "kings" (i.e. king and co-ruler)¹⁰³. Two, however, include reference to the king's wife and sons¹⁰⁴.

In contrast, in the documents of Arsakid date we learn only the queen's name, title and relationship to the king, the details provided in the dating formula. We hear nothing else. In the five passages, for example, which report offerings for the life of the Parthian king, i.e. in all the passages where we are able to judge, there is no mention of any queen, or indeed of any son of the king¹⁰⁵.

¹⁰¹ Sherwin-White/Kuhrt 1993: 128 draw attention to the emphasis laid on it by some kings.

¹⁰² Lehmann 1892: 330-332, on which see Kuhrt 1996: 51-52; cf. also *AD* 2 No. -247B Obv. 4' (248/7) and *AD* 2 No. -245B 'Obv. 5' (246/5).

¹⁰³ *AD* 2 No. -171B 'Rev. 7' (172/1; Antiochos IV and Antiochos). For parallels (with no reference to the queen) in other cuneiform documents of the Seleukid period see Sherwin-White/Kuhrt 1993: 202-203.

¹⁰⁴ *AD* 2 No. -187A 'Rev. 5' and 8' (188/7; offerings made by Antiochos III) and *AD* 2 No. -178C 'Rev. 21' (179/8; offerings on behalf of Seleukos IV). For Greek inscriptions which record dedications made on behalf of the ruler and which include the queen see, for example, Savalli-Lestrade 1994: 419-420 and n. 18, and SEG VII nos. 15, 17, 22 and 24 from Susa (2nd century). For the evidence provided by Greek inscriptions as to the wealth and political role of some Seleukid queens see the works listed above in n. 4.

¹⁰⁵ *AD* 3 No. -140A Upper edge 1 (141/0); No. -133B 'Obv. 24' (134/3); No. -132 D₂ 'Rev. 14' (133/2); No. -129A₂ 'Obv. 19' (130/29; cf. A₁ 'Obv. 14'); No. -107C 'Rev. 18' (108/7), the kings being Mithradates I, Phraates II and Mithradates II. In other contexts there are of course references to male members of the royal family (holders of high offices); e.g. to Bagayāsa, the king's brother, in *AD* 3 No. -132B Rev. 22 (133/2).

The disappearance of the royal family as a family is surely significant. The Arsakid regime, according to the cuneiform documents, is one which lays much greater stress than the preceding one on the unfettered powers of the king. Our queens are notably absent from the main part of both these texts and the two Greek parchments. Their names do of course appear in the formal dates, although this is perhaps largely to draw attention to the legitimacy and power of the kings. Some of them may have been very influential behind the scenes. However, their specific roles and activities remain wholly concealed from us.

Appendix I: The Rival Kings of the Years 91/0 to 76/5

Among the much-discussed problems of these years are the following: the identity of the Arsakes of Avroman I (Nov. 88), the number of kings recognised in Babylon in this period and the duration of the reign of Gotarzes I. The Avroman king, to begin with the first of these, cannot be Mithradates II, as often believed in the past, for there is strong evidence, noted above (2.1.3-4), that Mithradates died in 91. Nor can he be Gotarzes I (a son of Mithradates; cf. 2.1.3-4), Orodes I, or any other king recognised at Babylon in this period. His title is “king of kings,” the title notably of Mithradates in the last eighteen years or so of his reign, whereas the successors of Mithradates in cuneiform texts until the sixties, have the title “king” (cf. n. 21). In addition, his queens (Siake, Aryazate-Automa, Azate, nos. 8-10) conflict with Asi’abatar (no. 3), Gotarzes’ queen, who appears in documents until 87/6 (cf. n. 8). But he could be another son of Mithradates, his title proclaiming him to be the rightful successor. Moreover, if we accept that a monarch’s personal name is employed in documents in order to distinguish him from a competitor (cf. 2.1.3-4), he could well be a rival of Gotarzes, a rival from at least March 90, when we first meet the name Gotarzes in a datable text, until 87/6, after which the personal name (and queen) disappear (cf. n. 8).

Orodes I (80/79-c. 76/5), on the other hand, is perhaps given his personal name in 80 (cf. 2.1.3-4 and n. 22) to distinguish him from the Arsakes who appears in cuneiform texts from 86 to 81 (for the texts see Del Monte 1997: 254 n. 482). This ruler has the title “king,” but no personal name or queen. He could be Gotarzes, as Oelsner (1975: 37 Table 1) and others suggest (McDowell 1935: 207, thinks of him as another son of Mithradates II). But whoever he is, the fact that the name Orodes is not used in 78/7 (or perhaps even in 79/8; cf. n. 9) suggests that his rival in Babylonia disappeared soon after 80. In the years after 80, however, Orodes may have had to face a different rival, one in the east, for it is often believed that an ostrakon from Nisa (Nisa no. 2639 [Nova 366]) marks the accession of a new ruler (perhaps Sinatrukes) in Nisa in 78/7; see the suggestion of Oelsner (1975: 38-39).

Appendix II: Chronological Table of the Parthian kings from
c. 191 BC to c. AD 38

Priapatius c. 191-c. 176	Phraates III 70/69?-58/7
Phraates I c. 176-c. 171	Mithradates III c. 58/7-c. 54
Mithradates I c. 171-c. 138/7	Orodes II 58/7-c. 39/8
Phraates II c. 138/7-c.128/7	Phraates IV c. 39/8-c.3/2
Artabanos I c. 128/7-c.124/3	Phraatakes (Phraates V) c. 3/2 BC-AD 4
Mithradates II c. 124/3-91	Orodes III c. AD 4-6
Gotarzes I 91/0-87/6 or later	Vonones I c. AD 8/9-15
Orodes I 80/79-c. 76/5	Artabanos II c. AD 10/11-c. 38
Sinatrakes 78/7?-70/69?	

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(Abbreviations of names of Greek and Latin authors and works follow *The Oxford Classical Dictionary*.³ Oxford. 1996).

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THEA MUSA, ROMAN QUEEN OF PARTHIA

BY

Emma STRUGNELL
(University of Melbourne)

Abstract: This article considers the ancient and modern evidence for reconstructing the life of Thea Musa, Roman Queen of Parthia. This singular woman rose to prominence in Parthia just prior to the turn of the millennium, and is identified as a gift of Augustus himself to King Phraates IV. Through this gift Augustus sought to undermine Parthian succession. Yet incredibly, Musa receives no specific mention in any Latin source. It is argued that the omission of her narrative is deliberate and an indication of the vexation felt by Augustus at his failure to maintain the so-called ‘Parthian Peace’ first negotiated in 20 BC. Musa’s ascendance in Parthia marks a resurgence of Parthian claims to the disputed territory of Armenia. Outright war is averted only by the intervention of Gaius Caesar. The decision to send the Parthian heirs to Rome, it is argued, should not be interpreted as Parthian acceptance of Roman hegemony, but rather as part of Musa’s desire to ensure her political position and that of her son, Phraataces.

Keywords: Thea Musa, Phraates IV, Augustus, Parthian Standards

This paper takes as its subject the remarkable life of Thea Musa, Roman Queen of Parthia. This singular woman is the first Parthian Βασιλίςσα, and the first woman to be deified within her own lifetime¹. Musa in fact held such a position of political authority that she, and not her husbands, seems to have directed Parthian foreign policy. Musa is responsible for the presence of the first Parthian ‘hostages’ at Rome, of which Augustus famously boasts at *Res Gestae* 29. Musa plays a critical role in both the return of the standards in 20 BC, and Gaius Caesar’s concordat with Parthia in AD 2. And yet, Musa receives no mention in the *Res Gestae* or indeed in any other Latin source. This article considers the extant literary and numismatic evidence, and attempts to elucidate the reasons for Musa’s obscurity.

¹ As Θεαμουσα or Θεσμουσα. See Gardner 1877: 46; Wroth 1964: 172; Sellwood 1980: 58.8,9,10,12; Shore 1993: no. 324, 5.

This paper commences with a discussion of the ancient and modern literary sources for the life of Musa. I will then discuss the ‘Parthian problem’ and the significance of Augustus’ settlement of eastern affairs in 20 BC. The presence of the Parthian heirs at Rome, I propose, should not be perceived as a sign of submission, but rather as part of Musa’s efforts to secure the permanence of her own position, by ensuring the elevation of Phraataces. I then consider Parthian intervention in the disputes of Armenia, and contend that Phraates IV invoked the ancestral claim to this territory at a time when he was very much under Musa’s influence. She may be perceived behind this shift in policy. Finally, I discuss Musa and Phraataces’ expulsion and downfall.

The Sources — Ancient and Modern

The most informative ancient literary source on the life of Musa is Josephus’ *Jewish Antiquities*, which devotes considerable space to domestic affairs in Parthia². For Josephus, such unrest provides a background for the revolt of two brothers, Asinaeus and Anilaeus, who established an independent Jewish state at Nearda in Babylonia (*AJ* 18.325ff). Josephus identifies Musa as an Italian slave given to Phraates IV by Augustus, and reveals that she was treated as concubine until after the birth of a male heir. Josephus credits Musa with the plot to send Phraates’ heirs to Rome and to murder her husband. He considers as truth the allegations of incest, as Musa married her son Phraataces and ruled jointly with him as deified Queen³. Musa and Phraataces are said to have openly supported the anti-Roman revolution in Armenia, and Josephus ascribes the overthrow of Musa and Phraataces to the Parthians’ disgust of the two crimes of parricide and incest.

References to affairs in Parthia are found in other Greek sources, such as Dio Cassius, although the rise of Musa herself is omitted⁴. Perhaps more significant are literary sources in which Musa does not appear, where we would certainly anticipate her inclusion. It must be remembered, of course,

² Jos. *AJ* is the only ancient source for Musa cited by Karras-Klapproth 1988: 95.

³ Although rejected by Bigwood 2004: 44.

⁴ Dio (55.20f) mentions the revolt of Armenia in 6 BC and Phraataces’ letter to Augustus, which he places after Gaius’ arrival in the East, but does not mention Musa at all nor her rise to prominence.

that Musa was given to Phraates IV as a present from Augustus, and this woman, a Roman, had risen to the position of Parthian Queen. Foremost in this category is the *Res Gestae* of Augustus himself. I can only conclude that Augustus' silence on this issue is indicative of his vexation. Other sources which deliberately obscure Musa's role are Velleius Paterculus, an eyewitness to the historic meeting of 2 BC, Horace, Propertius, and Strabo.

Josephus' testimony would seem fanciful, were it not corroborated by extensive numismatic and visual evidence. This paper considers key items of visual culture, which I believe, provide some insight into Musa's motivations as Βασιλίςσα, the joint coinage of Phraataces and Musa and a marble portrait of Musa as Hellenistic Monarch. This paper also considers several Latin texts which may contain allusions to Musa. These include Lucan's *Pharsalia*, M.Felix' *Octavius*, and the *Oracula Sibyllina*⁵.

The silence of Latin authors is reflected by modern historians, who reduce Musa's role to a few sentences at most, and fail to appreciate her true role as the decisive factor in Parthian politics. The *Oxford Classical Dictionary* (2003) concedes Musa a mere three sentences, all of which appear under the entries of her husband and son-husband, Phraates IV and Phraataces, (Phraates V), respectively. Phraates IV, it is noted, was 'assassinated by his wife Musa, a former Roman slave presented to Phraates by Augustus'. Phraataces is implicated in the murder plot in his own entry. The relationship of Musa and Phraataces is neatly compacted into a single, somewhat awkward sentence; 'In AD 4, Phraates, who had married his mother Musa in AD 2, was deposed by the Parthian nobles' (Wiesehöfer 2003).

The *Enzyklopädie der Antike* elucidates some additional information, although here too Musa appears under the entries of husband and son. It correctly states that Musa became influential in the latter years of her husband's rule, only after she had produced a male heir, and it was she who engineered the plot to send the four legitimate sons of Phraates to Italy, to secure succession for her own son⁶. Musa's marriage to her son Phraataces is said to have 'polit.-religiöse Gründe,' and is cited as a key reason for

⁵ Lucan *Phar.* 8.401-10, Min. Fel. *Oct* 31.3, and the *Orac. Sib.* 7.38-50.

⁶ Pauly Wissowa *Enzyklopädie der Antike*. 'Anlässlich der Geburt eines Sohnes wurde sie zur königlichen Gemahlin erhoben, vier bereits erwachsene Söhne von anderen Frauen wurden auf ihr Betreiben 10 v. Chr. ins Römische Reich abgeschoben. Damit war der Weg für Musa und ihren Sohn frei,' vol. 9: 959. Compare *RG* 32; Tac. *Ann.*: 2.1; Jos. *AJ.* 18.2.4.

popular resentment towards him. The emphasis on political and religious grounds alludes to attempts to explain the union as evidence of the growing influence of Zoroastrian culture, and of *xvaetvadath*, next of kin marriage, within it⁷.

Modern historical analyses show a similar tendency to overlook this important figure. Musa is mentioned by Rawlinson⁸, Taylor⁹, Debevoise¹⁰, Bivar¹¹, and Sullivan¹². Other scholars have correctly stated her role in the sending of the Parthian heirs to Rome¹³. In all accounts, however, Musa is always associated with her husbands, and her role reduced to a few lines at most.

Significantly, Musa does not receive mention in the canon of Augustan histories: T. Rice Holmes' *The Architect of the Roman Empire*, Syme's *Roman Revolution*, or A.H.M Jones' *Augustus*¹⁴. Nor does Musa appear in Sherwin-White's *Roman Foreign Policy in the East*¹⁵ or Sartre's *The Middle East under Rome*.

⁷ As argued by Debevoise 1938: 149. There is no evidence that it was advocated in Zoroastrian thought in the Parthian period, as no passages in the Avesta clearly indicate the nature of the relationship. Buch 1919: 152; Perikhanian 1983: 644. Examples of incestuous marriages include Queen Denak, sister and wife of Ardashir I, and Queen Atur-Anahit, daughter and wife of Shapur I. Such marriages also occurred among the Ptolemies of Egypt, the best-known example of which are Ptolemy II and Arsinoe II, known as the *φιλάδελφοι*.

⁸ Rawlinson 1873: 214-5.

⁹ Taylor alludes to Musa, but does not name her, and never accords her status above that of a concubine. Taylor, 1936: 163.

¹⁰ Debevoise 1938: 147.

¹¹ Bivar notes that an Italian slave girl 'of unusual accomplishments' had been presented to Phraates by Augustus, possibly as explicit compensation for his previous losses. Bivar cites Musa as the reason why the Parthian heirs were sent to Rome, but agrees with the line taken by Josephus, that Musa and Phraataces were expelled by the detestation of incest. Bivar 1983: 67-8.

¹² In his footnotes, Sullivan mentions that Phraataces married his mother, an Italian slave given to Phraates by Augustus, although does not name Musa or provide any additional information. Sullivan 1990: n.135, p. 318.

¹³ Mommsen 1885: 141; Hardy 1923: 148; Oltramare 1938: 134; Gagé 1950: 142; Kienast 1982: 345; Ridley 2003: 219. Dio 51.3 states that Augustus received the Parthian heirs by way of conferring favour on him. Tac. *Ann.* 2.1 states that Phraates sent his sons to live in Italy for fear of plots and sedition.

¹⁴ Jones 1970: 57-8 discusses the Parthian settlement.

¹⁵ Sherwin-White cites the relevant passages of Josephus in a footnote, but does not make reference to his explanation for sending the Parthian heirs to Rome, and thus Musa, at all. Sherwin-White 1984: 325 n. 5.

I am aware of only three publications which specifically address the life of Musa. J.M. Bigwood's recent article focussed upon her status as Βασιλίσσα and the ancient evidence for Musa's marriage to Phraataces¹⁶. P. Pasmans discussed the numismatic evidence¹⁷. P. Delorme's literary piece, *Musa: Esclave, Reine et Déesse*, evokes the circumstances of Musa's journey to the east and rise to power, but adds little to the historical debate¹⁸. This article differs in that it attempts to place the ancient evidence concerning Musa within the context of the Augustan settlement of the East.

The Memory of Carrhae

Crassus' defeat at the hands of the Parthians at Carrhae in 53 BC is irrefutably the most significant single event in Rome's relations with Parthia. The memory of this defeat was the ruling obsession which provided the impetus for repeated Roman attempts to invade (Bivar 1983: 66). The loss of Roman *virtus* associated with the campaign of Crassus in 53 was not only unbearable¹⁹, but considered dangerous, as a display of military weakness could induce *superbia* in the enemy²⁰. The restoration of Roman honour was Augustus' primary objective in the east, even at the cost of a Parthian war²¹.

¹⁶ Bigwood 2004.

¹⁷ Pasmans 2005.

¹⁸ Delorme 2005. This work is of a speculative, literary nature, and imbues Musa with a character and desires that are impossible to infer from the historical record.

¹⁹ For the explicit connection of military honour and masculine virtue, see Hor. *Odes* 2.7. For Crassus as symbol of Rome's lost virtue, Hor. *Odes* 3.5.4, 4.15.5; Prop 2.1.0.14, 3.4.6, and 4.6.79. The exception is Hor. *Odes* 3.6, which names Monases and Pacorus as enemy generals.

²⁰ Mattern 1999: 175. Julius Caesar first considered a Parthian war after Zela in 47 BC, when he left Sex. Julius Caesar, the son of a cousin, as *quaestor pro praetores* in Syria with the command of one or two legions. McDermott 1982/3: 225. A Parthian war is listed as one of Caesar's intended accomplishments by App. *Bell. Civ.* 2.110, 3.24 and 4.58; Cic. *Att.* 13.27 and 13.31; Nicolaus of Damascus *Bios Kaisaros* 16 (41); Vell. Pat. 2.59.4; Suet. *Aug.* 8.2, *Julius.* 44; 79.3; Plut. *Brut.* 22.2 and 25.2, *Caes.* 63 and 70.1-2; Dio 43.51, 44.15, and 45.3.1; Flor. 2.13.

²¹ Horace stresses that only a military victory against Parthia will atone for the national dishonour brought about by Crassus' loss, Hor. *Carm. Saec.* 3.5.2-12; Ovid *Ars Arm.* 1.171f

Signa Recepta, 20 BC

The restoration of the Parthian standards thus represents perhaps the most significant achievement of Augustan foreign policy. The event, not surprisingly, receives a prominent position in imperial propaganda, and in Augustus' own *Res Gestae*²², the rhetorical force of which implies a conclusion to hostilities with Parthia.²³ This image of Parthian supplication, however, deliberately obscures the true nature of Augustan diplomacy in the east, and Augustus' attempts to further undermine Parthian authority are omitted from contemporary Latin accounts. In *Res Gestae* 29, Augustus triumphantly boasts of his subjugation of Parthia, proclaiming

‘Parthos trium exercitum Romanorum spolia et signa reddere mihi supplicesque amicitiam populi Romani petere coegi.’

‘I compelled the Parthians to restore to me the spoils and standards of three Roman armies, and to seek as suppliants the friendship of the Roman people.’²⁴

The returned standards were temporarily housed in a temple on the Capitoline, and removed to Augustus' newly-erected temple of Mars Ultor in the Augustan Forum for its consecration in 2 BC²⁵. The consecration of

²² Parthians and Parthian affairs are explicitly mentioned in three passages of the *Res Gestae*: at *RG* 29, Augustus celebrates the recapture of the standards; at *RG* 32 Augustus refers to the Kings of the Parthians who have taken refuge with him; and at *RG* 32 Augustus records giving to the Parthians the Kings whom they demanded. An allusion to Parthian affairs is also found at *RG* 10, where the senate voted that Augustus' name might be included in the Salian hymn, as recorded by Dio 51.20.

²³ Strabo 6.4.2 portrays the return of the standards as a sign of Parthian submission. Horace and Propertius praise the humiliation of Parthia, and simply assume that it will be converted into a Roman province. Hor. *Odes* 1.12.53-4, *Carm. Saec.* 53-4; Propertius 3.4.1-10 and 4.3.67.

²⁴ Augustus here alludes to the standards lost by Crassus at Carrhae in 53 BC and Mark Antony in 40 and 36 BC. In fact, Mark Antony had already recovered the standards lost by his general Statianus. For Antony's recovery of standards, see Dio 49.44; Mommsen 1885: 124f; Hardy 1923: 139; Barini 1937: 236; Gagé 1950: 135; Volkmann 1964: 51; Brunt and Moore 1967: 73; Ridley 2003: 131. Similar implications of use of force to compel the Parthians to return the standards are found at Vell. Pat. 2.91.1; Strabo 6.4.2 and 16.1.28; Liv. *Per.* 141; Suet. *Aug.* 21.3, *Tib.* 9.1; Justin 42.5.10-11; Dio 65.8.1-2; Oros. 6.21.29; Cassiodorus *Chron.* 385 E; Flor. 2.39.65; Eut. 7.9.

²⁵ For the problem of identification, see most recently, Schaefer 1998: 52-3; Rich 1998: 89-90; Rose 2005: 21-22.

this temple coincided with the departure of Gaius Caesar for the east, and was marked by the re-enactment of the famous naval battles of Actium and Salamis²⁶. The sculptural program of the Augustan forum reaffirmed the centrality of the triumphal theme: marble statues of Republican victors lined its porticoes, leaving room for the erection of statues honouring future *triumphatores*²⁷. Augustus' own victories were memorialised by a quadriga which stood in the centre of the forum.



Fig. 1. Silver cistophoros, Pergamon. Obv- IMP. IX. TR. PO. V. Bust of Augustus r. Rev- MART VLTO to l and r of circular domed temple containing vexillum. (Photo: Copyright the Trustees of the British Museum. Sutherland and Carson, *Roman Imperial Coinage* I, 507).

The *Signa Recepta* are critical to the 'Pax Augusta' and Roman self-identity. On a symbolic level, the recapture of the standards, '*derepta Parthorum superbis postibus*' (Hor. *Odes*: 4.15.6-7), serves to reassert the *virtus* and universal hegemony of Rome, and validates the position of Augustus as its ruler. Augustan propaganda would have us believe that the Parthians returned the standards out of fear of Roman military might²⁸. While a kneeling Parthian appears on the coins of Augustus (Fig. 2), no such display of submission ever took place²⁹. The return of the standards was nevertheless interpreted by Augustan poets as Phraates' acceptance of the *princeps*' jurisdiction and power³⁰. The senate

²⁶ *RGDA* 23; Dio Cassius 55.10.7-8; Ovid, *Ars Amat.* 1.179-228 and *Fasti* 5.545-98.

²⁷ Dio Cassius 55.10.3

²⁸ Horace boasts that the standards were 'ripped from the Parthian's arrogant doors' *Odes*, 4.15.4-8 and *Epist* 1.12.27-8; Propertius predicts a future punitive invasion of Parthia, 3.4.1-10 and 4.3.67.

²⁹ See Mattingly, 1927: 172, XLIII no.4. *RIC* Aug. Nr. 17, 311f and 46ff-98ff.

³⁰ Hor. *Odes*, 4.5, 25-7, 15.5-12, 23 and *Epist* 1.12.27-8, 18.56-7; Virgil *Georg* 3.30-3 and *Aen* 7.601-6, 8.726-8; Ovid *Fasti* 5.580-98, *Trist* 2.227-8, *Ars Amat.* 1.177f; Prop 4.6.79-84.

voted Augustus a Parthian triumph and erected an arch commemorating this historical occasion in the Forum Romanum (Fig. 3)³¹. The return of the standards is famously depicted on the Prima Porta statue, found at the Villa of Livia³². In itself, however, the return of the standards was not sufficient to avenge Rome's wounded pride; once lost, Roman *virtus* could only be regained by the performance of heroic acts, through the conquest and annihilation of the enemy³³.



Fig. 2. Silver denarius, Rome. 18 BC. Obv- Bust of Feronia. TVRPILLIANVS III. VIR. FERO; Rev- CAESAR AVGVSTVS SIGN RECE. Kneeling Parthian r, extending standard. (Photo: Copyright the Trustees of the British Museum. Sutherland and Carson, *Roman Imperial Coinage* I, 288).



Fig. 3. Silver cistophoros, Pergamon. 19-18 BC. Obv- IMP. IX. TR. PO. V. Bare head of Augustus r; Rev- S. P. R. SIGNIS. RECEPTIS. In centre of single span triumphal arch surmounted by quadriga; On the arch, IMP. IX. TR. POT. V. (Photo: Copyright the Trustees of the British Museum. Sutherland and Carson, *Roman Imperial Coinage* I, 508).

³¹ Simon 1986: 86-7; Nedergaard 1993: 80-5; Kienast 1999: 343; Scott 2000: 183-91; Rose 2005: 28-34.

³² For the Prima Porta statue, refer Simon 1959; Kahler 1959; Calci 1984. The Prima Porta statue in fact depicts a standing, and not kneeling Parthian, as noted by Mommsen 1885: 126; Ridley 2003: 215. This anomaly was not noticed by Galinsky 1996: 155-164, whose study on this monument is the most comprehensive.

³³ See Hor. *Odes* 3.5.27-30; Mattern 1999: 150.

The settlement of 20 BC in fact resulted from the failure of Augustus' attempts to secure Roman influence in Parthia by his support of the pretender Tiridates³⁴. Tiridates' second Parthian campaign ostensibly provided a pretext for Augustus' gift. The *Shahinshah* Phraates IV had ordered the execution of his harem in the spring of 26 BC to prevent them from being captured by Tiridates (Isidore of Charax: 1), and in thanks for his co-operation in returning the Parthian standards, Augustus presented Phraates with a unique gift: an Italian slave-girl named Musa, possibly in an attempt to gain information or influence the King in Rome's favour³⁵. This view is enticing; not only did Augustus 'gift' have political precedents in Near Eastern monarchies (Suet. *Julius* 25), but by unsettling the Parthian succession, Augustus could potentially launch a punitive invasion against Parthia, with the probable aim of converting it into a Roman province. Augustus' choice of gift is made more poignant by the fact that Phraates had not been left entirely bereft of female comfort; archaeological records reveals that at least four other Arsacid Queens were still living in 20 BC³⁶.

Parthian heirs at Rome

For poets of the Augustan age, Rome's *imperium* over Parthia was signified by presence of the Parthian heirs at Rome, a detail which once again assumes a prominent position in the *Res Gestae*. As I suggest, Phraates IV's decision to send his legitimate heirs to Rome should be conceived not as a sign of deference to Rome, but as the will of Musa. This view is supported by Josephus (*AJ*: 18.39). Musa's actions seem entirely aimed at ensuring her continued legitimacy through the elevation of her son by Phraates, Phraataces.

³⁴ Tiridates struck his coins with the unique legend of ΦΙΛΟΠΩΜΑΙΟ, 'Friend of the Romans'; a phrase not used by any previous Parthian ruler, even those with established alliances with Rome. This epithet clearly implies a strategic alliance, if not actual military support. According to Justin 42.5.8, Tiridates promised to hold the Parthian throne on behalf of the Romans. See Magie 1908: 151. Sherwin-White rejects the idea of Roman material support for Tiridates. Sherwin-White 1984: 322.

³⁵ As posited by Taylor 1936: 163; Debevoise 1938: 143; Delorme 2005: 57, 175, 185, *passim*. Delorme places Musa's arrival in the east before 20 BC, at the time of the return of 'Young Phraates,' whom he identifies as Vonones.

³⁶ Olennieire, Cleopatra, Baseirta and Bistheibanaps. Minns 1915: 32; Debevoise 1938: 140.

The *Res Gestae* suggests the presence of the Parthian heirs in Rome is a sign of Parthian submission. It is they who seek Roman *amicitiam*; the language used is evocative of that used of Roman client states.

‘Phrates Orodis filios suos nepotesque omnes misit in Italiam, non bello superatus, sed amicitiam nostrum per liberorum suorum pignora petens.’

‘Phraates, son of Orodes, King of the Parthians, sent all his sons and grandsons to me in Italy, not because he had been conquered in war, but rather seeking our friendship by means of his own children as pledges’³⁷

Latin sources repeatedly refer to the Parthian heirs as *obsides*, hostages³⁸.

As stated above, the transfer of the Parthian heirs to Rome should not be interpreted as a sign of Parthian dependence³⁹. Rather, the presence of the Parthian heirs in Rome actually served the political designs of Musa,

³⁷ This incident is also mentioned in: Strabo 6.4.2, 16.1.28; Vell. Pat. 2.114.4; Jos. *AJ* 18.42; Suet. *Aug.* 21.3 and 43.4; Tac. *Ann.* 2.1; Justin 42.5.12; Oros. 6.21.29; Victor Ep. 1.8; Eutr. 7.9; Ridley 2003: 219. Taylor suggests that the event took place soon after 20 BC, an argument based upon the close association of the recapture of the standards and Parthian hostages in Orosius, Justin, Strabo and Velleius, although her argument is hardly convincing. Taylor 1936: 161. Mella argued that the Parthian heirs were sent to Rome to study, but I find this argument even more fanciful. Mella 2003: 319. Nedergaard suggest that Phraates returned the standards, prisoners of war, and sent his sons to Rome as hostages. This argument places too much weight on the Augustan line of Latin sources, thus Musa’s role is not truly appreciated. Nedergaard 1988: 111.

³⁸ Vell. Pat. 2.94.4; Suet. *Aug.* 21.3, 53.4; Tac. *Ann.* 2.1; Justin 42.5.12; Oros. 6.21.29; Victor Ep. 1.8.; Eutr. 7.9. The Greek sources uses an equivalent term: Strabo 6.4.2, 16.1.28; Jos. *AJ.* 18.42 and 18.46.

³⁹ Strabo states that Phraates handed over his sons either a measure to prevent their revolt, or in an effort to ‘slavishly’ seek an alliance with Rome, 16.1.28. Tacitus sees Phraates’ actions as motivated by fear of his subjects’ disloyalty: Vell. Pat. 2.94; Tac. *Ann.* 2.1; Justin 42.5.11 and Orosius 6.21.29 also see the event as indicative of Parthian submission. Romer interprets this event as a sign of Phraates’ increasing dependence on Roman support, and as an explanation for his adherence to the settlement of 20 BC. Romer 1979: 200, 201. Scullard interprets the presence of the Parthian heirs at Rome as symbolic of her submission to Roman *imperium*. Scullard 1959: 248. The most likely reason for sending the Parthian heirs to Rome is appreciated by Mommsen 1885: 141; Hardy 1923: 148; Debevoise 1938: 143f; Oltramare 1938: 134; Gagé 1950: 142; Bivar 1983: 67; Gruen 1996: 160; Ridley 2003: 219. Anderson 1934: 264 and Bigwood 2004: 32 thought the sounder explanation had been given by Strabo.

who sought to secure the throne for her son Phraataces⁴⁰. The presence of Phraates' legitimate heirs was not, of course, without considerable strategic advantage to Augustus, who could theoretically produce a challenger to Parthian succession at any moment. However, it must be noted that Parthian royal houses rarely consisted of only four sons; when Phraates IV seized the throne, he secured his rule by butchering all thirty of his legitimate brothers⁴¹.

Strabo (16.1.28) states that the Parthian princes were treated as befitting their rank, at the public expense and in a magnificent manner. Suetonius' account, however, suggests the Parthian heirs were treated as the novelties, and he places them in the context of other marvellous curiosities; a two-foot high dwarf, a rhinoceros and 50 cubit-long serpent (*Aug.* 43.3-4; Nedergaard 1988: 109). Suetonius describes how Augustus presented them in public display, seating them in the second row behind him at the arena (*Aug.* 43.4). That Augustus presented the Parthian heirs confirms their political weight, while his strategic placement of his guests implies their inferior status. Two of the sons of Phraates IV never left Rome, and their names appear on tomb inscriptions discovered in the capital, reading:

‘SERASPANDES, PHRAATIS ARSACIS. REGVM. REGIS. F. PARTHVS’

and ‘RHODASPES. PHRAATIS ARSACIS. REGVM. REGIS. F. PARTHVS’ (*CIL*: 6.1.1799; *ILS*: 842).

The eldest, Vonones, returned to Parthia as King in AD 7, but his dislike of banquets and horses aroused suspicion, and he was forced to flee to Armenia⁴². Phraates, son of Phraates IV, was the benefactor of a temple at Nemi, perhaps dedicated to Isis⁴³. He too went on to contest the Parthian throne, although died soon after his arrival in Parthia. Tacitus (*Ann.* 45.31) attributes Phraates' death to the barbarous Parthian way of life.

⁴⁰ Jos. *AJ.* 18.49-42. Sherwin-White proposes that Phraates sought to safeguard his own position by turning the system of ‘hostages’ to his own advantage. Sherwin-White 1984: 325.

⁴¹ Dio, 50.8. This fact is noted by Ridley 2003: 220; Sullivan 1990: 468.

⁴² Vonones' return to Parthia is recorded in *RG* 33; Jos. *AJ.* 18.46; Tac. *Ann.* 2.1.

⁴³ *CIL* 14.2216; *ILS* 843; Debevoise 1930: 144; Nedergaard 1988: 109.

Musa as Parthian Βασιλίςσα

Josephus provides an insight into the dynamics of power between Phraates IV and Musa. As seen above, Musa was critical in the decision to send the Parthian heirs to Rome, and the explanation given by Latin authors — that Phraates feared plots and sedition — appears to be an argument Musa herself would have employed. Phraates was apparently ‘so smitten by her abundant charm of face and figure that with time, after she had born a son Phraataces, he declared this wench to be his wedded wife and held her in honour’ (*AJ* 18.40). Musa is seen to be the real source of authority, as Phraates was unable to refuse the dictates of his Queen (*AJ* 18. 39). Earlier numismatists have even proposed that Phraates IV may have elevated Musa to the position of joint ruler and living deity in the latter years of his own reign⁴⁴.

Josephus’ account confirms that Musa was motivated by a desire to consolidate her own political authority. And while E. H. Minn’s analysis of two documents from Avroman confirms that Parthian Queens were customarily named alongside their husbands in legal documents (Minns 1915: 30), Musa was evidently not content with this level of respect, and demanded a position of visual equality. On the joint issues of Musa and Phraataces, Musa’s portrait is on the same scale as her son/husband, indicating a position of equality between the rulers⁴⁵. The normal inscription for Musa on Phraataces’ drachms is ‘ΘΕΑΣ ΟΥΡΑΝΙΑΣ ΜΟΥΣΗΣ ΒΑΣΙΛΙΣΣΗΣ’ ‘Of the goddess Urania Musa, Queen’ (Sellwood 1980: Types 58.8, 9, 10 and 12; Shore 1993: 324).

Parthian imperial iconography strives to portray Musa not only as legitimate Βασιλίςσα, but also as deified Queen⁴⁶. The importance of Musa’s choice of epithet, ‘Θεά Οὐράνια’, cannot be overstated⁴⁷. Although Herodotus (1.131ff) associates the epithet with the Achaemenid deity,

⁴⁴ Lindsay 1852: 149. Musa, however, only appears on Parthian coinage in reign of Phraataces. The only other appearance of Queen and King together in Parthian coinage is in the reign of Artabanus II. See Wroth 1903: 172; Sellwood 1980: no. 63.20; Shore 1993: no. 324, 5. Kawami 1987: 55 n.131 claims that an unnamed queen appears in the bronze of Orodes II. Wroth 1903: 81, n116, calls her Tyche.

⁴⁵ Bigwood 2004: 37-8, 57 dates the tetradrachms from March 1 AD to September AD 4, and observes that Musa always appears on the reverse and never the obverse. This does not necessarily indicate an inferior status.

⁴⁶ Bigwood 2004: 39 cites Hellenistic evidence and suggests that although this title signified status, it did not necessarily confer political authority.

⁴⁷ Although at least one attempt has been made to connect Musa’s epithet to that of Queen Urania of Mauritania, this is unlikely. Settiani 2000: 438-9, n11.



Fig. 4. Drachm of Phraataces and Musa. Ecbatana. Obv- Bust of Phraataces wearing diadem I, crowned by two flying Nikes. Rev- Bust of Musa I, legend ΜΟΥΣΗΣ ΒΑΣΙΛΙΣ-ΣΗΣ], ΘΕΑΣ ΟΥΠΑΝΙΑΣ monogram of Ecbatana. Sellwood Type 58.9; Shore 324. (Photo: Münzkabinett, Staatliche Museen zu Berlin).

Anahita or Anaitis, it is more likely to reflect an association with Aphrodite (Zahn 1923: 450; Bigwood 2004: 52). The epithet itself is closely linked with fertility and material abundance, and seems to reflect the epithet of the Ptolemaic Queen Cleopatra Thea (Head 1911: 769). As mother of the reigning King, Phraataces, Musa can be seen to fulfil this productive role. It is also significant that Musa is identified by name in the imperial coinage: Parthian kings are not normally identified, and are more surely distinguished on iconographic grounds. The joint coinage of Phraataces and Musa employs traditional iconography associated with fertility and abundance.

Although Robert Zahn (1923: 441-55) identified a finger-ring which he believed depicted Musa, this has been rejected by more recent historians (Cumont 1939: 339 n.3). A marble sculpture found at Susa is more certainly identified. This bust portrays a woman in the manner of a Hellenistic monarch. F. Cumont and T Kawami identify the figure as Musa⁴⁸. Her visage is serene and striking, her status indicated by the turreted crown and diadem worn by Parthian rulers. The figure's idealised features are reminiscent of representations of Tyche, and the portraits of the Ptolemaic Queens Arsinoe II Philadelphus and Cleopatra Thea on coinage, both Queens, we must remember, who underwent deification⁴⁹. The choice of Hellenistic, eastern motifs is clearly deliberate. This is not a pro-Roman monarch, but one supportive of traditional oriental ideas of rule.

⁴⁸ The identification is upheld by Cumont 1939: 333; von Gall 1967: Pl.393; Pasmans 2005: 2, but rejected by Peck 1993: 412-3; Amiet 2001: 273; Bigwood 2004: 62.

⁴⁹ Arsinoe II was deified posthumously by Ptolemy II and III. For Cleopatra Thea, see above, n.62. The ring is discussed in detail by Cumont 1939: 333. For the coins, see Poole 1883: Pls VIII II; XXIII, I.



Fig. 5. Marble bust identified by F. Cumont as Queen Musa.
(Photo: Courtesy National Archaeological Museum, Teheran).

Parthian Nationalism and the Armenian Question

Augustus' efforts to unsettle Parthian succession may have been aimed at facilitating the annexation of the strategically important Armenia. What Augustus did not anticipate was that a Roman Queen might encourage a resurgence in Parthian nationalism, and a foreign policy opposing that of Rome.

Phraates IV seemed resigned to Roman interference in Armenia at the time of Musa's arrival at Parthian court. In 20 BC the Armenians had requested from Rome Tigranes, the brother of Artaxes, to rule over them. At this time, Phraates appears unconcerned that the ancestral land of Armenia was practically considered a Roman province. Phraates' policy of non-intervention is, however, reversed at a time when we know that Musa was his chief adviser.

Upon the death of the Roman nominee, Tigranes II, in 7 BC, the Armenian nationalist party had installed Tigranes III and Erato, his sister-wife,

the children of the dead king as legitimate rulers⁵⁰. The failure of the Armenians to consult Rome was a point of considerable vexation, and led Augustus to declare King of Armenia one Artavasdes II, brother of the dead Tigranes II⁵¹. The choice of Tigranes III and Erato, as will be explained shortly, had strong support from Parthia itself.

The rise of Phraataces

The Armenian rebellion occurred shortly before the murder of Phraates by Musa and her son. Although Phraataces alone was being groomed as heir (Jos. *AJ* 18.42), he felt sufficiently insecure in his position to anticipate the hand of time. Here too we may perceive the influence of Musa. Phraataces

‘plotted against his father with the assistance of his mother, with whom, indeed, according to report, he also had sexual relations’⁵²

Aged at most 17⁵³, Phraataces’ actions on his accession most likely conducted under auspices of his mother, by now well versed in diplomacy and statecraft, who sought to extend Parthian suzerainty in Armenia. Upon his accession, Phraataces sent ambassadors to Rome announcing his installation and proposing a renewal of the peace which had existed between Augustus and his father (Jos. *AJ* 18.42.). Furthermore, Phraataces requested the surrender of the four sons of Phraates IV, indubitably with the intention of permanently removing them from the political scene. More significantly, Phraataces asserted the Parthian right to intervene in Armenia. In 1 BC a coalition of Parthian and Armenian forces drove the

⁵⁰ Dio 60.10a. See also *Pauly-Wissowa* 2000: Erato. On the coins of Tigranes III and Erato see Head 1887: 636 (the Armenian material was omitted from the 1911 edition.); Marsh 1931: 81ff and 211f.

⁵¹ Tac. *Ann.* 2.4; Kienast, 1982: 345. See also Roman issues proclaiming victory in Armenia, *BMC*: 307, 671, 673, 675.

⁵² Debevoise states that ‘Musa took the final step to secure for her son Phraataces the throne of Parthia; Phraates, now an old man, was poisoned’. Debevoise absolves Phraataces of responsibility, though does not cite any source which may support his reasons for doing so. Debevoise 1938: 147.

⁵³ Phraataces’ age may be calculated as follows. Musa was presented to Phraataces in 20 BC. We may assume that she gave birth nine months later. Numismatic evidence confirms that Phraataces succeeded to the throne between 2 and 4 BC. If we assume the former is correct, Phraataces can only have been 17 at most at the time of accession.

Roman nominee, Artavasdes, from Armenia, and once more Tigranes and Erato secured control⁵⁴.

That Augustus had already entrusted a Parthian war to his adoptive heir, Gaius Caesar, is confirmed by both literary and other accounts. At the time of Gaius' departure from Rome in May, 2 BC, the Armenian throne was still occupied by the Roman nominee, Artavasdes⁵⁵. Rome's actions were thus clearly aggressive.

Gaius' departure for the east was timed to coincide with the consecration of the temple of Mars Ultor in May of 2 BC, the ceremony and spectacle of which helped transform Parthia from peaceful suppliant to implacable foe⁵⁶. An altar in the Vicus Sandaliarius depicts Gaius receiving the *tripudium*, and was certainly consecrated before May of 2 BC⁵⁷.

Gaius' campaign was portrayed as a mission to avenge the defeat of Carrhae⁵⁸. Ovid (*Ars Amat.* 1.179-81) identifies Gaius as Ultor, the avenger of Crassus' defeat,

'Parthe, dabis poenas: Crassi gaudite sepulti,
signaque barbaricas non bene possa manus
Ultor adest'

'Parthia, thou shalt pay the penalty; Rejoice, ye buried Crassi, and ye standards that shamefully endured barbarian violence. Your avenger is at hand.'

The return of the standards is but a prelude to a punitive campaign aimed at the restoration of Roman honour. Ovid has Fortuna proclaim vengeance for the slaughter at Carrhae,

"'Parthe, quid exsultas?' dixit dea. "Signa remittes,
quique necem Crassi vindicet, Ultor erit."

⁵⁴ Vell. Pat. 2.100; *RG* 27; Tac. *Ann.* 2.4; Dio, 55.10.18. The numismatic evidence is suggestive of a victory in Armenia as early as October of 2 BC. (Sellwood Types 3.57.1-12).

⁵⁵ The date is discussed most recently by Rose 2005: 45 n131.

⁵⁶ Rose 2005: 47.

⁵⁷ The altar in Vicus Sandaliarius is inscribed with name of the consul M. Plautius Silvanus, had been replaced by Gallus Caninius by the time of the dedication of the temple of Mars Ultor. Vell. Pat. 2.110.2; Rose 2005: 49.

⁵⁸ See also Ovid, *Ars Amat.* 1.201-12; Dio 55.10; Gruen 1996: 160.

““Why exult thou, Parthian?” said the Goddess, “Thou shalt send back the standards, and there will be an avenger who shall exact punishment for the slaughter of Crassus.””

Before his arrival in the east, Tigranes and Erato sent an envoy to Augustus requesting the Armenian throne. The princeps was apparently satisfied with this display, and bade Tigranes to receive investiture from Gaius in Syria (Dio 50.21).

That Augustus seriously considered a punitive campaign is evidenced by his commission to Isidore of Charax, whose Parthian Stations could be employed in a possible invasion. However, neither party was willing to risk defeat, and in AD 2, a concordat was broached. King Phraataces met Gaius Caesar on an island in the Euphrates, as witnessed by Velleius Paterculus;

‘cum rege Parthorum, iuvene excelsissimo, in insula quam amnis Euphrates ambiebat, aequato utriusque partis numero coiit. Quod spectaculum stantis ex diverso hinc Romani, illinc Parthorum exercitus, cum duo inter se eminentissima imperiorum et hominum coirent capita, perquam clarum et memorabile sub initia stipendiorum meorum tribune militum mihi visere contigit.’

‘On an island in the Euphrates with equal retinue on each side, Gaius had a meeting with the King of the Parthians, a young man of distinguished presence. Such a spectacle of the Roman army arrayed on one side, the Parthians on the other, while these two eminent leaders not only of the empires they represented but also of mankind thus met in a conference -truly a notable and memorable sight- it was my fortune to see in my early career as a soldier when I held the rank of tribune.’⁵⁹

While the treaty of AD 2 did not amount to an alliance, it did serve to define boundaries of influence more clearly, and fixed the Euphrates as ideological marker between the two empires. As stated by Sartre, this meeting surely prevented war (Sartre 2005: 68). The attention paid to visual

⁵⁹ Vell. Pat. 2.101.1-3. This reference to a young King can only refer to Phraataces/Phraates V, as at the time of his death (2 BC) Phraates IV would have been around 69-70 and hardly of youthful appearance.

and ceremonial equality marks a clear departure from the reception of Parthian ambassadors in the late Republic⁶⁰.

One explanation for Phraataces' decision to relinquish Parthian authority in Armenia is the instability of his position within the Parthian empire itself. Phraataces found that he would have a difficult time in establishing his rule; the nobles objected to him not for the crime of parricide (not uncommon in Parthian history), but more significantly, for his descent from an Italian concubine⁶¹.

The Latin sources and the question of incest

As previously intimated, Musa herself is never named by Latin authors. There are, however, passages in two texts which seem to refer implicitly to the incestuous relationship of Musa and Phraataces. Lucan's *Pharsalia* narrates Pompey's exile and his attempts to stir up a Parthian-backed invasion of Roman territory. The Roman commander, Lentulus, is said to reply to Pompey's suggestion by belittling Parthian military achievements and culture, launching into a tirade against the Parthian's 'barbarous lust';

'The King, maddened with feasting and wine, ventures on unions that no laws have ever specified; a single male is not exhausted by a whole night spent in the arms of so many concubines. Their own sisters lie on the couches of the kings, and, for all the sanctity of the relation, their own mothers. Thebes, the city of Oedipus, is condemned in the eyes of mankind by the gloomy legend of the crime he committed unwittingly; how often an Arsaces is born from such a union to rule the Parthians' (*Phar.* 8.401- 409).

⁶⁰ The first direct Roman contact with the Parthian empire occurred in 92 BC, when Lucius Cornelius Sulla, Governor of Cilicia, agreed to meet the Parthian ambassador Orobazes, described by Ampel. 31.2; Vell. Pat. 2.24.3; Liv. *Per.* 70; Plut. *Sulla* 5.3-6; Ruf. Fest. 15.. Plutarch suggests that Orobazes was put to death for his action, and reflects that while some praised Sulla for his display of superiority, others charged him with vulgarity and a brazen display of ambition. For Pompey's conference with Mithridates, see Dio 37.5.2-6, 3; Plut. *Pomp.* 33.6; Ziegler 1964: 27.

⁶¹ Bivar 1983: 68 sees the incest as the most significant factor. Rawlinson sees incest and parricide as significant, though he suggests that the unusual honours paid to Musa, a woman whose extraction was foreign and origins servile, roused the ire of the populace. Rawlinson 1873: 220. See aforementioned references in Jos. *AJ.* 18.2.4.

The specific references to Oedipus, sexual relations with sisters and mothers, and to parentage of the Arsacid kings clearly bring to mind the rise of Musa and Phraataces, as narrated by Josephus. Lucan's account furthermore suggests that the Parthian alliance is more repulsive than that of Oedipus and Jocasta, as the Parthians are fully cognizant of the laws they are violating. A similar revulsion is found in Josephus, who cites the detestation of incest as the determining factor in the Parthian revolution of AD 3 or 4. Josephus (*AJ* 18.39) states that Phraataces 'was detested on both counts for his subjects considered the incest with his mother no less abominable than the murder of his father.

Minucius Felix' *Octavius* reflects this hostile tradition, and in rejecting the accusations of incest levelled against the Christians, suggests that 'among the Persians, a promiscuous association between sons and mothers is allowed' (*Oct.*: 31.3). Minucius' allegations of improper sexual conduct are not confined to the east; in the same passages Minucius alleges that Athenians and Egyptians also engage in next of kin marriages. The Sibylline Oracles contain a reference to the presence of the Parthian heirs at Rome, but not to Musa and Phraataces (*Orac. Sib.* vii.38-50).

The charge of incest, though clearly repugnant to the Greek and Roman historians, cannot be considered significant explanation for Phraataces' and Musa's unpopularity⁶². The popular support for the next of kin marriage of Tigranes and Erato as discussed above, implies a wider acceptance of unions of this type⁶³.

What is perhaps more significant is Phraataces' treatment of Musa; the influence of and honours bestowed upon this woman surpass that of any Parthian Queen before, one moreover, whose origin was decidedly servile and extraction foreign (Rawlinson 1873: 220). Phraataces placed Musa's

⁶² According to Josephus, Phraataces 'was detested on both counts for his subjects considered the incest with his mother no less abominable than the murder of his father' *Jos. AJ.* 18.39. See also Lucan *Phar.* 8.401-10; *Min. Fel. Oct* 31.3; *Orac. Sib.* 7.38-50. The acceptance of Phraataces and Musa's marriage has been cited as evidence for a wider proliferation of Zoroastrian theology, as argued by Debevoise 1938: 149. Debevoise's suggestion is almost entirely rejected by modern historians. There is, however, an increasing prominence of Zoroastrian themes in Parthian imperial iconography, with the first Parthian lettering and fire altar appearing on the coins of Vologases I.

⁶³ Lewy 1944: 211, n.132 compares the marriage to that of Darius, Atossa and Artystone. Bigwood 2004: 46 emphasises the parallels between Musa and the Assyrian Queen, Semiramis.

effigy on his coins, styling Musa as Βασιλίσσα and Θεά Οὐράνια. The coins of Phraataces from 2 BC have on one side his portrait, and the effigy of Musa on the reverse⁶⁴.

In AD 3 or 4, Phraataces was caught up in a civil war and banished from the throne (Jos. *AJ* 18.42). It is my belief that subsequent decisions of the Parthian nobility, as described by Josephus, go a considerable way to explain the animosity felt towards Phraataces and Musa. After driving Phraataces from the throne, the Parthian nobles resolved that no form of government but monarchy was tenable, and secondly that the occupant of the throne should belong to the lineage of the Arsacidae. Josephus relates that

‘They had had enough of the upstart degradation to which the throne had been subjected by the marriage of an Italian concubine and her offspring.’
(Jos. *AJ* 18.42)

I wish to now return to a passage of the *Res Gestae*, which I believe, provides one clue to Phraataces’ fate:

‘Ad me supplices confugerunt reges Parthorum Tiridates et postea Phrates Regis Phratis filius’

‘Kings of the Parthians, Tiridates, and later Phraates, the son of King Phraates, took refuge with me as suppliants’⁶⁵

The identity of this Phraates is a source of contention. I believe the emphasis on Phraates status as king, and secondly, the inclusion of the word *postea*, confirms that the individual is none other than King Phraataces,

⁶⁴ Musa may not have been alive at the time, as first suggested by Kahrstedt 1910: 287; Bigwood 2004: 62.

⁶⁵ *RG* 32. The *RGDA* erroneously identifies this Phraates as the legitimate son of Phraates IV. As we have previously seen, the four legitimate sons of Phraates IV were sent to Rome in 10 BC as ‘hostages’- the only ‘Phraates’ who is able to seek friendship with the Romans is in fact Phraataces (Phraates V)- illegitimate son of Musa and Phraates IV, who seems to have been expelled from Parthia in AD 2, possibly as late as AD 4. Debevoise identifies Phraataces as Aphrahat the son of Aphrahat who ruled over Beth Aramaya, as stated by Mar Mari in *Acta Martyrum et Sanctorum* I: 68, no 7.

Phraates V, who probably fled as a suppliant to the Romans, from whence his mother came. Musa's fate is not recorded. Phraataces' friendship with G. Caesar, not to mention his formal recognition of Roman interest in the ancestral land of Armenia, could not but rouse the ire of Parthian nationalists (Oltamare 1938: 137).

In conclusion, Augustus' settlement of 20 BC resulted from the failure of his attempts to undermine the Parthian throne by his support of the pretender, Tiridates. This solution was intended to be temporary, and his gift of Musa to Phraates IV appears a clear attempt to further undermine Parthian succession. Musa and Phraataces however proved formidable opponents, who flouted Augustus' attempts to secure Roman influence in Armenia, and forced Rome to recognize the position of the Parthian empire as a permanent force in the East, as a rival of comparable size, ability and prestige to Rome. Musa is a figure undeservedly neglected in modern historical analyses. Her omission from extant Latin literature is perplexing, and is indicative of Augustus' increasing vexation with Parthian intervention in Armenia. Musa's presence may however be felt in Lucan's *Pharsalia*. The settlement of AD 1 is illusory in that it monumentally failed to secure Roman influence in Armenia; in AD 64 King Tiridates of Armenia received his diadem at the hands of Nero, while real control was ceded to Parthia. Cultural, religious and dynastic affinities ultimately proved stronger than any occupying force.

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COMPOSITION AND CONTINUITY IN SASANIAN ROCK RELIEFS

BY

Emma THOMPSON
(University of Sydney, Australia)

Abstract: The cliffs of Iran are adorned with rock reliefs from every period of its long history. During the years that the Sasanian dynasty ruled Iran, artists added to this collection considerably. These monuments are individual capsules of information on the general political, religious, historical and artistic milieu of the time. This paper presents a method for furthering our understanding of the Sasanian period through an analysis of the composition of each Sasanian relief. The analysis is based on the hypothesis that composition will serve as an indicator of artistic continuity and change and encode an artistic signature of sorts indicating the artists' background and training. The initial results suggest that the reliefs of the early Sasanian period reflect the work of artists from at least two schools of art.

Keywords: Sasanian, rock reliefs, composition.

The kings of the Sasanian dynasty ruled Iran for over four hundred years. During the first eighty-five years of the dynasty (AD 224-309) there were seven changes of crown, many military gains and losses and thirty rock carvings were commissioned to commemorate these events. Most of these were carved in Fars, the homeland of the dynasty: eight were carved in the company of the Achaemenid tombs at Naqsh-e Rostam; six line the way to Shapur's city at Bishapur; four were carved in the open air grotto at Naqsh-e Rostam; two were carved near Ardashir's first city at Firuzabad and the rest were carved as single reliefs at various locations across the province of Fars: Barm-e Dilak, Sar Mashhad, Sarab-e Bahram, Guyum, Rayy, Darabgird, and Tang-e Qandil. These reliefs are the principal monuments of the Sasanian period. Individually they contain valuable information about the social, religious, and political environment of the depicted king and as a group they reveal valuable information about the artistic environment of the time. This paper presents the results of research that demonstrates that our understanding of the Sasanian Empire and the artists who conceived its

greatest monuments can be furthered by a comprehensive analysis of the composition of each relief and can reveal the nature of the artistic environment at the time¹. This study is born out of the hypothesis that the decisions made by the artists during the process of composition will serve as a signature of schooling and causes the reliefs to unite or divide into groups accordingly. It assumes that the process of composition, as a step between conception and execution, was completed for every relief. This is a fair assumption, as all pieces of work beyond mere scribbles require composition. The study also assumes that these reliefs began as small scale-drawings that were then transposed onto the rock surface at a much larger scale. The task of composition is entirely removed from the task of carving. Therefore, this study will not address the reliefs as three-dimensional pieces of work, complete with intricate mouldings of hair and clothing, but rather as two-dimensional drawings of the artist's original conception. This research required the development of a technique for investigating rock reliefs outside of function, meaning or 'beauty', and instead in terms of composition. The result is a desktop technique that does not require excursion into the field. This is only possible because of the depth and integrity of previous research by scholars of the Sasanian period². They have created a field that is mature and suitable for the comprehensive comparative analysis that I am proposing. This paper demonstrates the technique and presents the results of eight reliefs from this early Sasanian period: Naqsh-i Rostam I and Naqsh-i Rostam III commissioned by Ardashir (AD 224-241), the first Sasanian king; Naqsh-i Rostam VI commissioned by his son Shapur I (AD 241-271); Bishapur V, commissioned by Bahram I (AD 271-274), another son of Ardashir and brother to Shapur I; Sar Mashhad, Sarab-i Bahram and Bishapur IV, commissioned by Bahram II (AD 274-292), the son of Bahram I; and Naqsh-i Rostam VIII, commissioned by Narseh (AD 293-301), son of Shapur I. These eight reliefs were chosen for publication because they represent a selection across 5 different reigns. In these eight the identity of the king is clearly identified by his crown and the kings are represented in a variety of situations — seated, standing and equestrian.

¹ Thompson, E 2004. *A compositional analysis of early Sasanian rock reliefs from Fars province, Iran* PhD thesis, University of Sydney, Australia.

² Such as the thorough descriptions and detailed, quality photographs as those in the *Iranische Denkmäler* series (Herrmann 1977, Herrmann 1989, Herrmann & Howell 1980, Herrmann & Howell 1981, Herrmann & Howell 1983).

Compositional analysis

The design carved into the rock is the accumulated result of many decisions made by the sculptor. These decisions form the process of composition. Composition involves every step from conception to execution. It is an essential step in the production of any piece of artwork and is thus common to all rock reliefs. During the process of composition, an artist's blank page demands many answers: what shape will the frame be? Where will the point of focus be? How many figures? Will the scene be symmetrical or will the fulcrum be off centre? What size is the design destined for? And so on. These choices are made in light of the artist's intended message or concept (Panofsky 1970: 83). The structure is a conscious intention to communicate a certain idea. To do this, artists have storehouses of technical and aesthetic solutions to challenges of representation (Root 1990: 129). For instance, when faced with depicting a person, the artist does not draw from life but from previously developed methods of constructing a human figure. Artists from similar backgrounds, mentors and schooling have similar storehouses. In addition, convention in composition is much slower to change than conventions of modelling and representation of detail. Two reliefs that appear to be carved by separate hands may share some elements of composition. Therefore, this paper demonstrates that the analysis of a relief not as a whole, complete monument, but as an accumulation of compositional decisions made by the artist will reveal that artists' background, mentors and schooling and provide a look into his/her storehouse. It is the express aim of this study to analyse a collection of the Sasanian rock reliefs in this way in order to further our knowledge of the artistic environment of the time.

Method

Each relief was prepared for compositional analysis in the same way. A scale line drawing was created for all reliefs before they were each analysed for size, shape, midlines, and division of the frame. This was followed by an examination of the content of each composition for the angles employed to create balance, interest, movement and harmony. The results of each set of analysis are presented below. As a complimentary exercise it is useful to conduct a hypothetical projection of the path of the viewers' eye through these angles. While useful, this exercise is unverifiable and

serves only to validate the assessment of angles and highlight the focal point of the relief. The final stage of analysis focuses on the individual elements of each composition. The figure of the king and, where applicable, the figure of the king's horse are examined for proportion.

Preparation of the reliefs

Clear, front-on photographs are available for all of the selected reliefs. With the aid of a GIS mapping program³, these photographs can be treated as maps and registered to a coordinate system based on the dimensions of the panel. This study does not make use of any of MapInfo's interpretive capabilities but rather employs its strengths at managing and displaying images within a specific coordinate system. To use MapInfo to manipulate maps, the geographical coordinates of a map are registered using at least three known longitude/latitude coordinates as control points or anchors. By entering this information, the user has the ability to pan, zoom, and view the map at any scale (Johnson 1996: 215). The photographs of the reliefs are treated in the same way as an aerial photograph or map. The four corners of the panel act as the control points to register the photograph to an x, y non-earth grid. Once registered, the reliefs can be manipulated as maps, with zoom capabilities up to 800%. The MapInfo program utilises layers of information. The original map or photo works as the foundation layer, then information from that map can be digitised into many layers of information to be viewed or manipulated separately or together. For instance, a paper map can indicate roads, rivers, train lines and contour lines on one confusing sheet. MapInfo allows this map to be viewed as four separate maps, or layers, with one sheet for each feature. This is achieved by a process of digitisation. Digitisation is the process of tracing the map objects into separate layers. The number of layers is not limited, and when viewed together, they appear as one.

The steps required to prepare a relief for analysis are: 1. Scan the photograph image; 2. Register the image using its physical dimensions; 3. Create a new blank layer over the image, zoom in and 'trace' the relief using the drawing tools; and 4. When complete, the original scanned image can be turned off or made not visible and a scale line drawing of the relief remains. From this line drawing, measurements are made between two

³ MapInfo

points, to two decimal places, as if standing in front of the relief with a tape measure. The reliefs are now ready for compositional analysis. In broad terms, each relief is analysed for these types of composition: composition of the frame, the composition of the contents and composition of the parts, or the use of proportion.

Composition of the frame:

Size of frame: The intended size of a panel is one of the first compositional decisions made by the artist. The actual size will be influenced by the location but it is also a major factor in the communication of the message. The same image depicted at a different scale will send a different message. However, artists can develop a penchant for a certain scale and are influenced by the output of their contemporaries. In order to indicate the relative size of each relief, the above digitization process was repeated for an adult human figure to illustrate relative scale. The actual size of each relief is expressed in its physical dimensions and the scale is demonstrated by the human figure depicted next to it at the same scale⁴.

Shape of frame: The size of a panel may be subject to fashion or whim but the shape of that frame needs not only agree with the parts within that frame, it must also agree with the artist's eye and what is considered pleasing and unobtrusive to the overall concept. Whether this decision is made consciously or instinctively cannot be known. However, the shape that that artist considers appropriate and appealing is borne from his/her experience or background.

Within artistic circles, the quest for pleasing proportions and harmony has been long standing and is well known. One of the mysteries of art stumbled upon by this quest is the harmony of the Golden Section⁵. The Golden Section is the proportion arising from the division of a straight line into two, so that the ratio of the whole line to the larger part is the same as the ratio of the larger part to the smaller part (Kent 1995). It is considered the

⁴ The reported measurements for each relief vary slightly from publication to publication.

⁵ The Golden Section is also referred to as the Golden Mean, the Golden Ratio and the Golden number.

most aesthetically pleasing proportion. Therefore, it follows that the most aesthetically pleasing rectangle is one of dimensions that relate in the same way: the length of the long side divided by the length of the short side results in a ratio of roughly 1.618 (Read 1931: 26-27). Over the centuries much attention has been paid to it⁶. All mathematical or geometrical theories of beauty have been based on the Golden Section (Molnar 1966: 206). The mystical reputation of this ratio goes beyond lines and rectangles; it is also found in the Fibonacci sequence. Leonardo Fibonacci is the 13th century Italian mathematician who first described the eponymous unending series of numbers: 0,1,1,2,3,5,8,13 and so on, in which each number, except for the first, is the sum of the preceding two. When any number in the Fibonacci sequence is divided by the preceding number, we find they relate in the Golden Ratio. The mystique of the Golden Ratio and the Fibonacci sequence comes from the discovery of its repeated application not only in art and architecture, but also in nature. This proportion is exhibited in sunflower florets, pinecones, leaf arrangements on pineapples, the spirals of some mollusca and the mating pattern of bees and rabbits (Holt 1971: 63). Use is often made of the Golden Ratio to ensure pleasing proportion between length and breadth in the rectangles made by windows and doors, by picture-frames and by the pages of a book or journal. The pyramids of Egypt have been explained by it, the Parthenon at Athens fits into a Golden Rectangle and the Gothic cathedral is also built in its proportions: the relation of the length of transept to nave, of column to arch, of spire to tower, and so on. The Golden Ratio can also be found in proportions of the human body. The proportion is also used frequently in pictorial art: the relation of the space above the skyline to the space below, of foreground to background, and equally, various lateral divisions also follows the Golden Section (Read 1931: 27-28). The width of the sections of stairs leading up to the Apadana at Persepolis are in ratio 3:5:8:5. These numbers form part of the Fibonacci sequence — the ratio of whose terms approximate the Golden Section. The mathematics of the Golden Section were well within the capabilities of ancient scholars although these dimensions could easily occur by coincidence because the ratio is psychologically pleasing. In the analysis the shape of the panel is expressed as a ratio. This figure is obtained by dividing the width of the panel by the height of

⁶ For example: Pythagoras, Le Corbusier, Vitruvius, Vuillard de Honnecourt, and Dürer (Elkins 1999: 273, Panofsky 1970: 96).

the panel. Therefore, a ratio of 1.0 is a perfect square and a ratio of 2.0 represents a thin rectangle twice as long as it is high. A rectangle with a ratio of 1.618 is a Golden Rectangle. In order to visually demonstrate the relationship of a Sasanian panel to the Golden Rectangle, each Sasanian relief is depicted with a Golden Rectangle overlaid.

Midlines: The horizontal midline of a frame can serve as a strong part of the underlying skeletal structure without necessitating symmetry. Objects are arranged around this axis until balance is achieved. The analysis of midlines in composition simply involves marking the precise horizontal and vertical midlines on the relief in order to assess what part these two axes play in the arrangement of the parts. This simple exercise will divide the reliefs into those that use the centre line as a structural axis and those that do not.

Division of frame: On the assumption that these designs were to be transposed from a scale drawing to a larger than life size carving in rock, which is an exercise that possibly required the use of scaffolding, the artists must have used a system for reproducing the design at any scale. While standing an arms length from the working surface, the face of the rock, a sculptor cannot rely solely on the use of eye to accurately dispose of the frame with all the harmony of the original design. Egyptian artists made use of a grid to aid this process (Robins 1986). Roaf suggests that the Achaemenid sculptors at Persepolis sketched the repeated motifs freehand or perhaps by the use of dividers and a technique called 'pointing' (Roaf 1983: 100). How the Sasanians overcame this problem is not known, although it is a technical aspect that would be learned and passed on from mentor to pupil and would endure within a school of art. A craftsman's technical struggle, which begins as a creative solution to a technical problem, will crystallise into simple rules of procedure. For instance, in struggling to accurately capture the human form masters contrive repeatable formulas of proportion to pass on to their students. These rules or solutions become embodied in the tradition and enable the next generation of artists to struggle with new problems and advance to new solutions. New masters develop new rules but these are slow to change. Therefore, this analysis will divide the reliefs by revealing the artist's rules of procedure inherited from their masters. By endeavouring to find a grid of equal modules that finds confluence with many elements of the design, we will discover perhaps not the actual

Sasanian method for transposing a small design to a lofty position on the cliff, but it will highlight further likeness between compositions that may appear to the viewer to be unrelated. Egyptian artists developed a canon of proportions for the human figure during the Old Kingdom and by the 12th dynasty they had introduced a squared grid system as an aid to obtaining these proportions. For instances standing figures were drawn on a grid consisting of eighteen squares between the hairline and the baseline and key points on the body lay on or near particular lines (Robins 1990: 107). By the 25th dynasty, the grid system had altered to twenty-one squares between the baseline and the top of the eye (Robins 1986: 34-37).

Without knowing the metrological system at work in Sasanian workshops or whether the frames were even divided in this way, the method for examining this aspect is largely trial and error. Each relief was overlaid, using the mapping software, with a set of eight grids in gratings of 6, 8, 9, 10, 18, 15, 16, 21. These grids were chosen from an understanding of the different divisions used in different schools of art in the construction of the human body.

Composition of the contents:

The use of angles and the movement of the eye:

Mapping the movement of the eye is an unverifiable exercise of interpretation. It is an exercise that is designed to make the viewer consider the entire work as a sum of its parts. Within the frame, the principal purpose of the arrangement of the parts is to draw the eye in and direct it around the composition in an interesting, easy and logical path (Arnheim 1974: 34). By effectively arranging the forms and parts, the artist is creating the focal point, the point where the viewer's eye will linger and return to. The eye is carried along the angles created by the parts of the composition and kept within the composition by opposing angles. The use of these leading and opposing angles often arises out of the geometric underlying structure of the scene and helps to ensure stability in the scene and satisfaction in the eye of the viewer. Straight vertical and horizontal angles can introduce a sense of calm and order into a scene; however, overuse of these angles can be detrimental. Diagonals on the other hand are dynamic and suggestive of movement. To be used successfully, they must be carefully balanced to prevent the eye leaving the composition on one of these trajectories. An

examination of the angles used in each composition reveals the underlying structure of the design. By highlighting the skeletal angles and structure we can uncover the artists intention to create the viewers' experience and guide the viewers' eye to appreciate the work as a whole (Arnheim 1974: 35). The result of the exercise reveals the path that the eye might take naturally, without knowledge or instruction.

Use of proportion in the composition of the parts

Even in a well-arranged composition, inaccuracies in proportion will be the first aberration to disturb a viewer's experience. Therefore, the study of proportion is almost as old as art itself. The proportions used in the construction of a particular object encode a fingerprint of the artist and his/her background. Something as innately recognisable as the human form is subject to extreme scrutiny by the human eye. For this reason, since artists first sought to reproduce the human form in image, artists have tried to formulate a method to explain and reproduce its beauty. Every school of art has its own canon of proportions and a formula that will allow the artist to reproduce the human form correctly and at any scale. Therefore, once arrived at, the method for the construction of a human figure is likely to become standardised, conservative and slow to change. The same theory can be applied to any repeated motif that is likely to become standardised.

The history of this quest is long and many examples are known: Mesopotamian artists were making endeavours in this field in the time of the prophet Isaiah (44:13) as he described the activity of the Assyrian/Babylonian 'maker of graven images': 'the carpenter stretcheth out his rule; he marketh it out with a line; he fitteth it with planes, and he marketh it out with the compass, and maketh it after the figure of man, according to the beauty of a man...' (Panofsky 1970: 98). Mesopotamian artists producing statues of Gudea favoured a sexagesimal system of metrology (Azarpay 1990:99). The Neo-Assyrian royal image depicted on the glazed brick panel at Nimrud, during the reign of Shalmaneser III shares a nine to one head to body ratio with the Achaemenid archer frieze from Susa (Azarpay 1987: 192-193, 200-201). Polyclitus, the Greek sculptor of the fifth century BC defined a mathematical formula for the ideal athletic male: the body equal to 7.5 head heights (Smith 1989). Then, towards the end of the first century BC, Vitruvius published his '*De Architectura*' which is now the principal Roman source for the history of proportions and he divides the face into

three equal parts (forehead, nose, lower portion) (Elkins 1999: 272). The Byzantine theory of proportions resulted in a nine face length canon (Elkins 1999: 273). The 16th century German artist Albrecht Dürer, published 4 volumes on human proportion, which contain carefully described formulae for the depiction of man (Panofsky 1970: 96). Based on Dürer's models the Flemish painter and theorist Gerard de Lairese (1631-1711) constructed the 18th century canon of ideal proportions in a 6 foot figure of 10 face lengths (Azarpay 1990: 93). It has become the aim of much modern scholarship to unlock these different formulas which developed and disseminated from ancient Egypt, ancient Greece and the ancient Near east. In this way, the figures in Egyptian wall paintings have been the subject of much attention and research (Badawy 1965; Davis 1989; Iversen 1975; Robins 1986; Robins 1990; Robins 1994). Similarly, detailed statistical analysis has been carried out on Greek sculpture in order to compare the proportions in the divisions of the body with the Egyptian canon and with the Modern Greek population (Guralnick 1970; Guralnick 1978; Guralnick 1981; Guralnick 1985). Furthermore, Michael Roaf studied more than 3000 figures from the Achaemenid buildings and tombs at Persepolis for the development of style and the identification of individual sculptors. The number of different compositional elements at Persepolis is small and the close similarity between repeated elements led Roaf to conclude that the sculptors must have made use of accurate drawings or pattern books (Roaf 1983: 99). The purpose of examining proportion in this study is not to discover the canon of proportions or system of metrology used by Sasanian artists but rather to observe likeness or difference among the reliefs in this respect. The uses of certain proportions, the proportion taught to the artist as those that are 'right' and 'good' are likely to be standardised and used by that artist irrespective of the overall composition. Two artists who compose a human figure or the figure of a horse, according to similar proportions are likely to have come from the same school of art and hold the same beliefs about the 'right' way to construct these forms. Therefore, the composition of the kings and the composition of the king's horse will cause the reliefs to group according to the set of proportions favoured by the artist.

Composition of the king: The kings are depicted in four different positions: standing, jousting, equestrian and enthroned. At this stage of the analysis each king is only compared with other kings in the same pose, e.g. standing with standing, equestrian with equestrian and so on. Observations are

made on features such as the waist height, waist width, shoulder size and shape, head size, leg length, position of the feet and for the equestrian figures, the angle of the leg.

Composition of the horse: Horses are a common element in Sasanian reliefs and, like the human figures, represent a repeated motif that is likely to become crystallised in practice and passed on to succeeding artists. The horses are examined in the same way as the human figures and observations are made on head size, leg length, rump height and the relationship between these dimensions.

Results

The results of the compositional analysis are presented below. They are arranged chronologically in order of the commissioning king, beginning with the reliefs of Ardashir.

Naqsh-i Rostam I (Ardashir I)



Fig. 1. Photograph of Naqsh-i Rustam I and line drawing overlaid.

Naqsh-i Rustam I simultaneously illustrates the equestrian investiture of Ardashir by Ahuramazda and the victory of both figures over their enemies. Ahuramazda on the right holds the barsom bundle in his left hand and offers a ring to Ardashir with his right. Ardashir receives the ring with his right hand and raises his left, bent forefinger in front of his face as a gesture of

respect. An attending page stands behind the king and raises a flywhisk in his right hand above Ardashir's *korymbos*. Artabanus, the last Arsacid king and enemy of Ardashir lies on the ground behind the king's horse. Similarly, Ahriman, enemy of Ahuramazda and personification of the spirit of evil, lies defeated and downtrodden behind the god's horse (fig. 1). Ahuramazda has extended the ring and the ribbons trail in result of the movement. Ardashir reaches for it but does not yet grasp it in his hand. His arm has a few degrees of bend left in it which, when extended, will place his hand directly at the ring in order for him to receive it and Ahuramazda to release it. The artist has made an effective choice of moment because the exchange is certain although some movement remains to be performed in the minds of the viewers. It is the immediate ease and satisfaction with which the eye casts across this relief that has elicited such reactions as 'masterpiece' (Herzfeld 1941: 312) and 'the finest relief of the Sasanian period.' (Herrmann 2000: 39). At the risk of losing this magic, an analysis of the design and composition of this relief can reveal the reasons for its success.

Basic composition of the frame

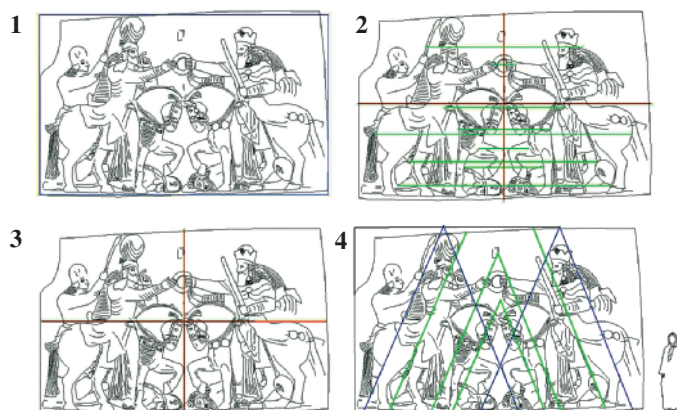


Fig. 2. Composition of Naqsh-i Rustam I. 1. Golden rectangle overlaid; 2. green lines demonstrating the technical symmetry of the composition; 3. midlines; 4. triangular structure of composition.

Naqsh-i Rustam I is approximately 6.7 m wide and 4.1 m high; a panel of this shape has a ratio of 1.63. This is almost precisely the shape of a Golden rectangle (fig. 2, no. 1). The horizontal midline exactly bisects the ring and runs between the foreheads and knees of the horses. It also runs

along the side of the projecting rectangle of rock above the ring. This may indicate a purpose for this projection in the execution of the design from the page to the rockface. The vertical midline falls on the horses' backs (fig. 2, no. 3). The symmetry suggested by these midlines is confirmed by precise measurements between opposing elements in the design. Figure 3 demonstrates how technically symmetrical they are. The ends of the blue lines are precisely equidistant from the centre line. For instance, where a blue line joins the tips of both tassels, those tassels are equal distances from the centre. Aside from the chest strap, the horses are as identical as one horse pressing its forehead to a mirror.

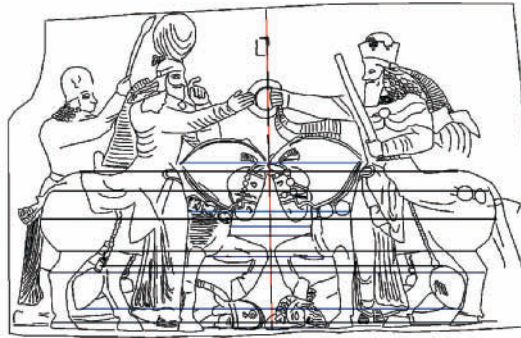


Fig. 3. Symmetry of Naqsh-i Rostam I; the ends of the blue lines are equidistant from the midline.

The symmetrical composition creates balance around the central axis. Although two figures oppose only one, together they are able to achieve balance without an additional figure behind the god because his billowing cloak in combination with his placement on the right side give them a sense of agreement and balance.

Angles used in composition

In addition to being well balanced, the composition also appears stable. A series of equal and opposite diagonals can be drawn on the design highlighting the planning and technical measurements involved in the design (fig. 4). Most of these diagonals are not evident in the final relief, however they are vital to the stability of the scene and the subtle direction of attention towards the centre. The line of the tassels on the opposing horses

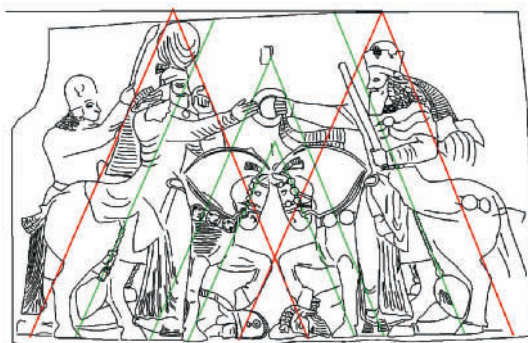


Fig. 4. Compositional diagonals of Naqsh-i Rostam I.

creates the most obvious diagonals. On Ahuramazda, this line is carried through to the angle of the barsom bundle and on Ardashir's side the diadem ribbons falling down his back and the angle that the page raises the flywhisk are equal to the angle of his tassel. The same angled lines from the front of the horses' rear, far leg meet at the jutting rectangle of stone and hug the sides of the diadem. The same lines forming a smaller triangle from the back of the horses' front standing leg, meet in the centre and travel along the horses' chest and bridle straps. The same lines are repeated again in the angle of the folded forelegs and the triangle created beneath them.

Movement of the eye

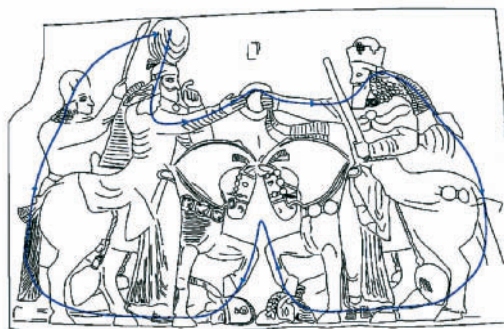


Fig. 5. Mapping the movement of the eye through the composition of Naqsh-i Rostam I.

The eye is first attracted to the figure of the king by his voluminous *korymbos* (fig. 5). It moves down over his face, observes the direction of his glance and continues into the strong angles of the king's right arm as it crosses his body. It follows the arm to the ring where it joins up with the right arm of Ahuramazda. Here the eye casts over the face of Ahuramazda and is drawn in two directions. It can take the strong lead of the god's barsom bundle or it can continue over the god's diadem ribbons. Since the barsom only leads directly to the top of the panel the eye chooses the easier clockwise path and continues to perform a loop over the right side of the relief. It travels over his cloak and around the horse to the base of the relief where it discovers Ahuramazda's prostrate enemy. At the head of Ahriman, it could continue in a straight line to the head of Ardashir's prostrate figure. However the pull created by the diagonal arrangement of the horses' forelegs and heads draws the eye up to observe the horses' heads and pause for a minute in the centre before returning to the base of the frame and continuing the clockwise loop over Ardashir's enemy and around Ardashir's horse. Behind Ardashir, the eye discovers the figure of the king's page and follows him and the flywhisk up to the top of the frame and back to Ardashir's *korymbos* where it can begin again. The path of the viewer's eye, directed by the arrangement of the parts, demonstrates that the centre of the composition and the exchange of the ring is the focal point.

Division of the frame

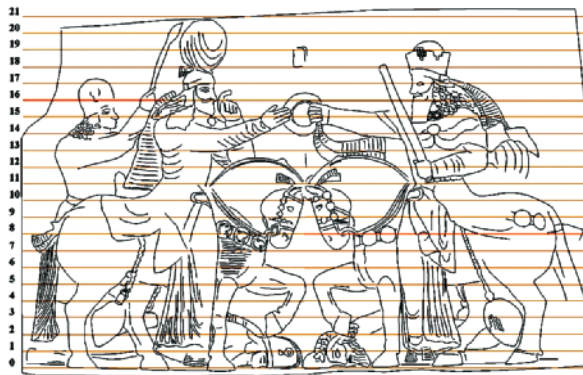


Fig. 6. Naqsh-i Rustam I; division of frame by 21.

When the Naqsh-i Rostam I panel was subject to the complete set of grids, the features of the design found most confluence with a grid of 21 and a grid of 16 (fig. 6 and fig. 7). This grid of 21 divisions is interesting because the size of the modules is equal to the height of the remaining piece of rock above the diadem.

The division of 16 is interesting because the diadem is equal to the height of two modules and falls precisely between three lines.



Fig. 7. Naqsh-i Rostam I; division of frame by 16.

Composition of the king

Ardashir is the only Sasanian king depicted crossing his body with his right extended arm. It is clear from the exercise of comparison that no other king is carved to the same design. Ardashir has exceedingly long legs, rounded shoulders, a slender torso, and a straight hanging leg. His posture is distinctive in the way his face is slightly in advance of his leg. There are however some similarities to be found. The king at Darabgird and to a certain extent the king at Naqsh-i Radjab I found the most agreement with the king from Naqsh-i Rostam I. The king at Darabgird shares Ardashir's rounded shoulders and straight hanging leg; however his leg is much shorter and his face is in a more vertical position. When their faces and crowns are aligned, their *korymbos* is a similar size and shape. The king at Naqsh-i Radjab I exhibits the rounded shoulders, low waist and long leg however the bend in the leg and the position of the face in relation to the body is quite different.

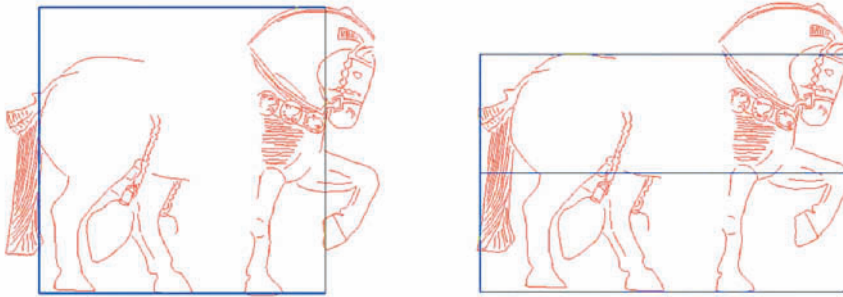
Composition of the horse

Fig. 8. Basic elements of the composition of the Naqsh-i Rostam I horse. The horse fits inside a square from rump to chest and hoof to head (left); and the height of the horse's legs equals the height of the horse's torso (right).

Figure 8 demonstrates that the body of the king's horse is as long as it is high and can therefore be circumscribed by a square from the rump to the chest and the hoof to the top of the head (fig. 8, left). This diagram also demonstrates that the height of the horse's legs is half the height of the rump⁷. The horse raises its right foreleg to an angle of 338° .

In a comparison of the king's horse at Naqsh-i Rostam I with all non-jousting horses from other Sasanian reliefs, the most likeness is found with the king's horses at Darabgird and Bishapur III.

Naqsh-i Radjab III (Ardashir I)

Naqsh-i Radjab III is one of three representations of Ardashir's divine investiture by Ahuramazda and the only relief of Ardashir at Naqsh-i Radjab. The mood is quiet and reverent. Eight figures are arranged in four groups of two: on the left two figures overlap each other and are completely separated from the king by space. Similarly, two figures on the far right are strongly overlapped and are separated from Ahuramazda by a column or strip of stone. In the centre, the ring unites the king and god; and two small figures form a couple standing beneath the beribboned diadem.

⁷ A conventional height measurement on a horse is made to the withers although on most reliefs the withers are obscured.



Fig. 9. Photograph of Naqsh-i Radjab III and line drawing overlaid.

For the first time the artist has chosen to depict the moment when both god and king share the ring (fig. 9).

Basic composition of the frame

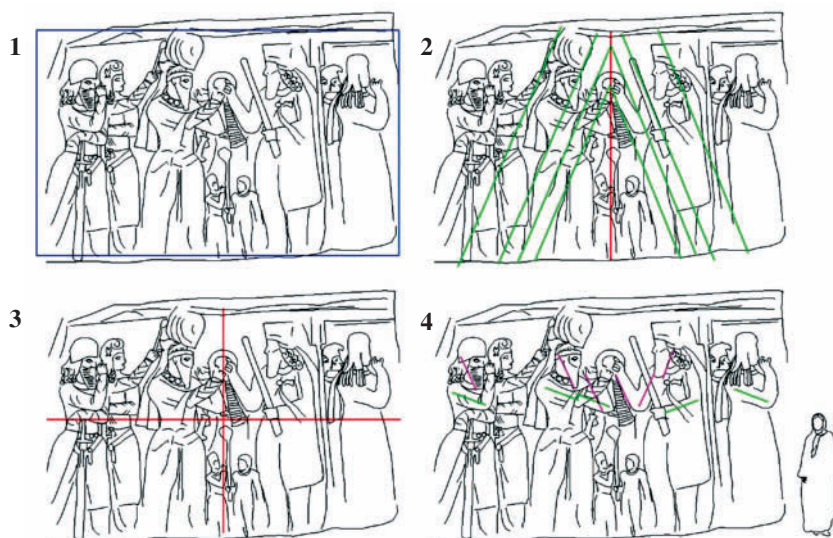


Fig. 10. Composition of Naqsh-i Radjab III: 1. a Golden Rectangle scaled to best fit the relief; 2. diagonals emphasise compositional elements; 3. midlines; 4. highlights some common angles.

The frame is approximately 5.1 metres in length and 3.2 metres in height and has a height: width ratio of 1.59. This closely approximates the Golden ratio of 1.618 as demonstrated in the figure above (fig. 10, no. 1). Although the naked eye perceives the centre of the relief to fall between the god and king, the centre of the ring actually marks the absolute horizontal centre of the frame and the ring is physically closer to the king (fig. 10, no. 3). While not strictly symmetrical, the relief is designed and balanced around a central axis. There are four figures on either side of the central line and although the two figures on the far right are of secondary importance to the main scene, they gain weight by creating visual interest on that side of the frame. Their attention is focused beyond the edge of frame and so the eye hovers here before returning to the main scene. The two small figures contribute meaning to the scene, emphasise the unity of the central group and provide visual interest in the lower half of the scene. The interaction between the king and god is without question the focal point. Not only do they stand on the central axis but opposing angles also lead the eye to them.

Angles used in composition

The diagonals used in the construction of the main scene draw the eye upwards and inwards (fig. 10, no. 2). The angle of the page's right arm and flywhisk is subtly mirrored in the angle of the king's tilted head, draping cloak and sword handle. These diagonals leading right are balanced by the angle of Ahuramazda's barsom, cloak ribbon, right forearm and diadem fillet leading left. The king's left forearm is also positioned at this angle, which helps to emphasise the potential direction of the ring (fig. 10, no. 2). The use of repeated angles helps to stabilise the design but also creates contrast and visual interest. For instance, the angle of the upper arm of Ardashir's dignitary is repeated in both upper arms of Ardashir, then contrasted in the equal opposing angle of Ahuramazda's left forearm, then repeated again in the woman's upper arm (fig. 10, no. 4). This pattern occurs also in the angle of the first dignitary's beard, Ardashir's beard, Ardashir's forearm, Ahuramazda's right forearm and is checked by the angle of Ahuramazda's beard and his right upper forearm.

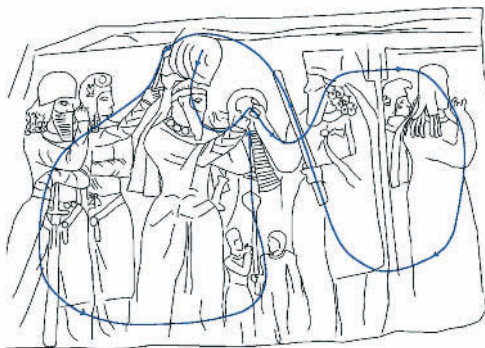
Movement of the eye

Fig. 11. Mapping the movement of the eye through the composition of Naqsh-i Radjab III.

The eye is first attracted to the height and volume of the king's *korymbos* (fig. 11). It moves down over his face, and then travels in the general direction of his line of sight and over his outstretched arm to the ring in front of his face. Here it joins Ahuramazda's right arm and continues down to observe his face. From here, the eye is drawn to the two figures standing behind the king. The eye wants to follow their line of sight but cannot travel beyond the frame so continues down to complete the perusal of their bodies. At the end of the loop, it meets the god's legs and is drawn up by the angle of the god's barsom bundle. This directs the eye back into the upper frame and over into the left half of the scene. Behind the king's *korymbos*, the eye is picked up by the page's flywhisk and easily travels down and over the two figures standing here. It is drawn down on the vertical line of their swords and along the base of the frame. Here it discovers the two small figures standing between the king and god. The eye pauses here for a second before being directed up to the ring by their sceptre, which meets with the vertically hanging diadem ribbons. This is the focal point of the scene.

Division of frame

The limit of the Naqsh-i Radjab III frame is not clear. It is certainly not perfectly horizontal. However, when the gratings are adjusted for the irregular baseline as it is in the figure below, a grating of 18 finds coin-

cidence with many elements of the design and reveals much about the composition (fig. 12). It is especially revealing for questions of the identity of the two accompanying dignitaries on the right hand side. The female figure depicted in full shares many elements with the king: they are both depicted in right profile and they both have their nose on line 14, raised hand on line 14, Ardashir's beard and the tips of the woman's hair on line 12, elbows on line 10, and diadem ribbons falling on line 9. This could indicate that the woman is of at least equal status with the king.

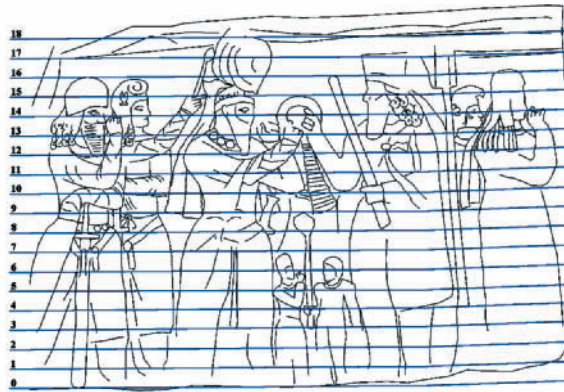


Fig. 12. Equal division of frame by 18.

Composition of the king

As in his equestrian image at Naqsh-i Rostam I, Ardashir's right arm crosses his body to reach for the ring and his left hand is raised to his face in a gesture of respect. Ardashir is unique in this standing position; therefore, it is difficult to make a close comparison with other standing kings. However, general likenesses and differences are still apparent. In comparison with the other standing figures, Ardashir has distinctly sloping shoulders and a narrow waist. The condition of the baseline prevents an accurate assessment of his full height although assessment of his waist size makes it apparent that Ardashir of Naqsh-i Radjab III, like Ardashir of Naqsh-i Rostam I, is tall and slender.

Naqsh-i Rostam VI (Shapur I)

This Naqsh-i Rostam relief is one of the largest Sasanian reliefs carved in Fars. It is superseded in length only by Ardashir's combat relief at Firuzabad and it is not rivalled in height by any other relief. However, its ability to impress and awe its viewers goes beyond its sheer size. The size of the relief is only one element of its composition. The design carved here is well balanced, satisfying and visually pleasing (fig. 13). The design of Naqsh-i Rostam VI uses only three figures and a horse to clearly express the superiority of both the Sasanian king and the Sasanian empire. The Sasanian king, Shapur I, is mounted on the right facing two Roman emperors on the left. He looks down to the face of the standing Roman and grasps his covered hands. The mood between them is calm: the Roman stands straight, the king sits straight and they look each other in the face. In contrast, there is tension in the whole body of the kneeling Roman. Every part of him is at an angle as he lunges towards the king. Tension is also created through the potential movement of his action and the choice of moment made by the artist. At this moment the figure is suspended in his movement to the ground, his gusting cloak shows the speed of his action and the already outstretched arms express urgency. At this moment it is clear he did not slowly get to his knees and then calmly outstretch his arms.



Fig. 13. Photograph of Naqsh-i Rostam VI and line drawing overlaid.

Basic composition of the frame

Currently the entire panel measures up to 15 metres in width and 7 metres in height, and has a ratio of 2.15. The human figure in figure 14 gives an impression of the reality of the scale.

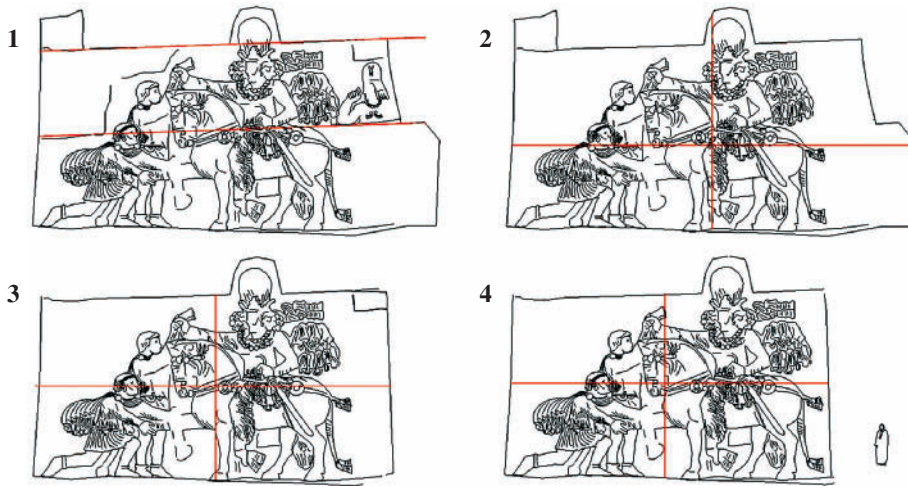


Fig. 14. Proposed shapes of the original frame of Shapur's relief at Naqsh-i Rustam VI, before the addition of Kartir's bust and inscription.

It is difficult to know the exact original width of the panel before Kartir's addition on the right side. His image may have not extended the relief at all by scaling his image and inscription to fit in the available space whereby the horizontal midline would fall just in front of the king's body, touching his *korymbos* and running through his left leg (fig. 14, no. 2). However, if Kartir left the upper edge of the right side largely unchanged but widened the lower half to accommodate his inscription, then the original horizontal midline would fall just in front of the horse's left foreleg (fig. 14, no. 3). It is also possible that the original extent of the right side was equal to the corner of stone remaining in the top right corner above Kartir's head, in which case the original edge of the panel would be just beyond the horse's tail ribbons and the original midline would be in line with the horse's chest (fig. 14, no. 4). The intended height of the panel is also vague. The height at left is different to the height at right and a strange protruding rectangle, almost the height of the king's *korymbos*, extends from the upper left corner. There are vague lines in the rock surrounding the Roman figures. The horizontal line behind the head of the kneeling Roman marks the exact vertical midpoint of this side of the panel, excluding the extension in the corner. It cannot be coincidence that a straight line drawn from this point to the stepped edge of the right side

of the panel falls directly on the horses back and creates a line at the same angle as the top of the relief (fig. 14, no. 1). It is without question that these lines are related to the planning and execution of the relief. It is problematic though that they are incongruous with the level baseline. It could be put down to resulting from the problems inherent in carving a panel so large. Without knowing the original shape of the relief, we cannot know the original x:y ratio or compare it to the shape and ratio of the Golden rectangle (1.618). We can however compare the hypothetical shapes illustrated above as well as the current shape with a Golden rectangle (fig. 15).

If the shape of the panel was completely unchanged by Kartir, then the width to height ratio of the panel is 2.152 and has no relationship with a Golden rectangle (fig. 15, right). Although if the original panel was either of the two smaller shapes, they resemble a Golden rectangle much more closely (fig. 15, left and middle).

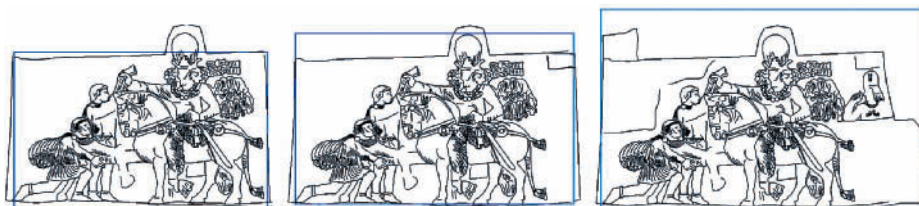


Fig. 15. Three possible shapes of the original Naqsh-i Rostam frame compared with the shape of a Golden rectangle.

Angles used in composition

The stability of this composition comes from a triangular structure (fig. 16). The two billowing cloaks remain outside the triangle without detracting from its stability and overall effect. In fact, if the cloaks fell flat the scene would lose visual interest. The line connecting the two cloaks serves to carry the eye through the scene and emphasise the lowliness of the kneeling Roman in comparison to the height and superiority of the Sasanian king. It also strengthens the line of sight connecting the standing Roman with the Shapur.

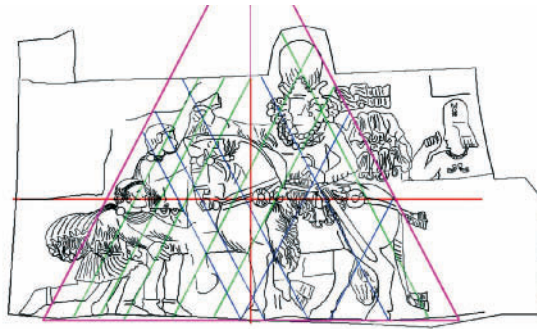


Fig. 16. Triangular construction of Naqsh-i Rustam VI.

Figure 16 above highlights the outermost triangle and indicates the occurrence of those angles within the composition. The triangle touches the back of the kneeling Roman, the top of the king's *korymbos* and the top of the horse's tail. Perhaps in support of the middle size of the original panel (fig. 14, no. 3), the centre of this triangle falls where that hypothetical midline stood: just in front of the horse's left leg. The left angles are repeated in the angle of the kneeling Roman's body, legs and sword and in the angle of the standing Roman's raised arms. This angle can also be seen in the vague guideline in the rock above the standing Roman's head, in the angle used in the king's crenellated crown and in the angle of the king's thigh. The opposing angle is equal to the downward angle of the crenellated crown and the angle of the king's left, upper arm.

Movement of the eye

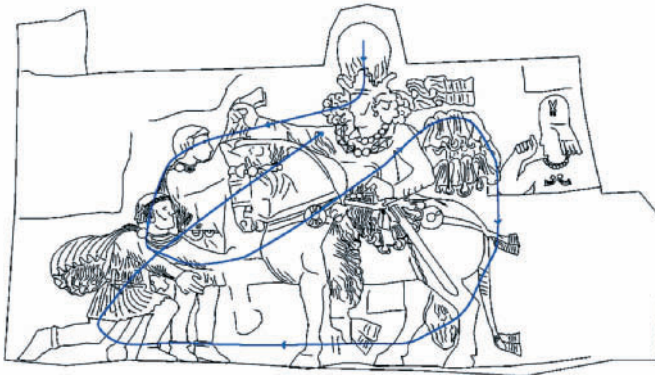


Fig. 17. Mapping the movement of the eye through the composition of Naqsh-i Rustam VI.

The eye is first attracted to the great height of the king and the break in the frame accommodating his *korymbos* (fig. 17). The eye then follows his line of sight to the standing king, and down to the kneeling Roman. It acknowledges his pleading gaze but because it already knows that the king's gaze is directed to the standing Roman it follows the line of his outstretched arms instead. Here the eye falls into the diagonal compositional line that joins the two fluttering cloaks through the horse's reins and so it is pulled in that direction. It then travels over the king's cloak and around the king's horse in a clockwise direction and down to the base of the frame. Once back at the kneeling Roman it is propelled by the common angles of his bent legs, sword and desperate gaze back to the face of the king and the beginning of its journey and the focal point.

Division of the frame

A grating of 21 found the most confluence between grid lines and features on the relief of Naqsh-i Rostam VI. However, it must be remembered that, as discussed above, on a relief of such size, keeping guidelines straight may have posed a problem (fig. 18).

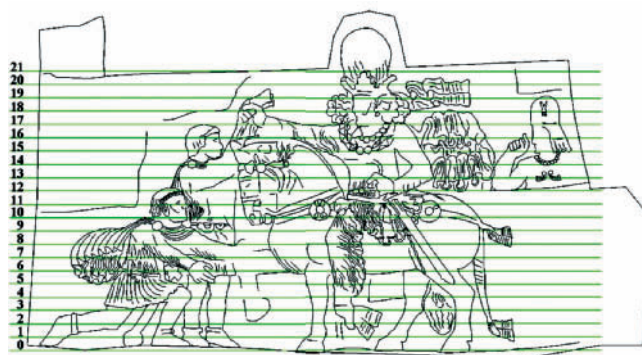


Fig. 18. Naqsh-i Rustam VI; division of frame by 21.

Composition of the king

Shapur sits straight in his saddle, right arm outstretched, left arm grasping the hilt of his sword. He has square shoulders, a large *korymbos* and most noticeably, a robust jaw line. He sits back in his saddle with his bent leg positioned well in front of his body. These features become clear when his body and

posture are compared with the other equestrian ceremonial kings: the king at Bishapur IV shares the square shoulders although he has smaller facial features, and holds his leg in a different position. His ribbons and cloak flap directly backwards like at Naqsh-i Rostam VI and they are positioned in the same relationship to each other although lower in relation to the king's head and shoulders. Bishapur V shares a close match with the Naqsh-i Rostam VI king. The Bishapur V king leans slightly more forward and hence his leg is slightly further back and arm slightly longer. They share the same waist height and position of cloak fastening and necklace in relation to the face. The cloak sizes are also the same although occupying different positions.

Composition of horse and rider

When the king is seated on his horse half the distance from hoof to *korymbos* is slightly above the horse's back (fig. 19).



Fig. 19. Relationship of horse to rider at Naqsh-i Rostam VI.

Composition of the horse

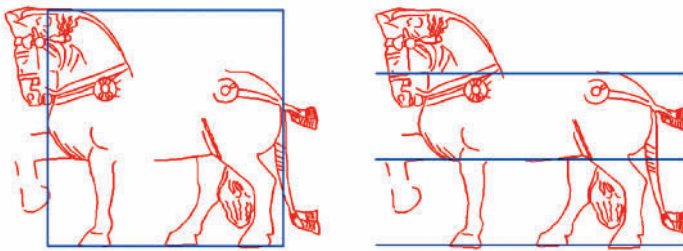


Fig. 20. Basic elements of the composition of the Naqsh-i Rostam VI horse; horse fits inside a square from rump to chest and hoof to head; the height of the horse's legs equals the height of the horse's torso.

The measurements of the body of the king's horse are equal from the rump to the chest and the hoof to the top of the head; thus fitting inside a perfect square. In addition, the height of the horse's back is equal to twice the height of the horse's legs (fig. 20). The horse raises its foreleg to an almost horizontal angle of 354° . The king's horse appears stocky to the eye. In comparison with the other non-jousting horses from other Sasanian reliefs, it is largely the size of the head that gives it that appearance. Also highlighted by this exercise is the lack of wavy haunch straps on the rear of the Naqsh-i Rostam VI horse. While unable to compare the height of the rump, the Bishapur IV horse shares many similarities with the Naqsh-i Rostam VI horse: position of the haunch strap, tail, tassel and position of the right legs. The head is shorter although positioned in the same relationship to the chest. The *Bishapur V* horse cannot be compared in terms of position of hooves, however, in many other respects it compares well: they are alike in every other respect except the rump is a little higher and the head is a little shorter.

Bishapur V (Bahram I)



Fig. 21. Photograph of Bishapur V and line drawing overlaid.

Scholars have described the relief known as Bishapur V as visually appealing and reflecting a high point in Sasanian rock sculpture (Herzfeld 1941: 321; Schmidt 1970: 129). This sense of harmony arises out of a well-composed scene that is balanced without being perfectly symmetrical and symmetrical without being monotonous. Unfortunately, Bishapur V also stood

in the path of the destructive water channel that has marred three of the four reliefs on this side of the gorge. Fortunately, not much of the composition is lost (fig. 21). Equestrian god and king face each other in similar opposing postures. Had the artist designed the god with right hand at the reins and left hand extending to the ring, the god and king would appear mirror images of each other and both hands would reach the ring. However, the composition would suffer. The opposing postures, the king's suspended sword and the off-centre ring break the symmetry and create visual interest without unbalancing the scene. Naqsh-i Rostam I, Bishapur I and Naqsh-i Radjab IV use a similar design concept, however, they all differ in the placement of the parts. Seemingly minor differences can have a great impact on the experience of the viewer. For instance, Naqsh-i Radjab IV and Bishapur V differ only in the placement of the horses and the angles used in the horses' bodies. At Naqsh-i Radjab IV the horses' heads and knees almost touch and they meet at oblique angles. At Bishapur V however, the horses are a small distance from each other and their heads and forelegs are opposed at identical, vertical angles. Some of the dynamism is lost with the choice of vertical rather than oblique angles. The combined change in angles and the extra distance between the horses hinders the movement of the eye and leaves the king's hand an extra stretch from the god's offered diadem.

Basic composition of the frame

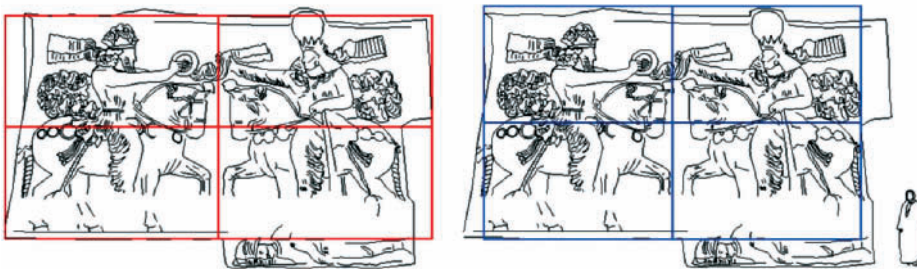


Fig. 22. Bishapur V; (left) midlines and (right) Golden rectangle.

The Bishapur V frame is irregularly shaped. Before the addition of the prostrate foe, the base of the frame was quite level although the upper edge is a little uneven. The intended width of the panel is the most unclear

dimension. The left edge tapers in from the bottom to the top and the right edge is stepped and extended in the upper half of the frame. The horizontal midpoint of the design is clearly intended to fall precisely between the heads and raised forelegs of the two horses. The upper right hand corner and the lower left hand corner are horizontally equidistant from this point. Therefore, it seems that these points were the intended horizontal extent of the panel (fig. 22, left). However, the god's horse is slightly longer than the king's horse so the midpoint between the tails of the two horses falls slightly left of the centre. It is possible that this was the result of a small calculation or measurement error made during the execution of the design to the rock face. Perhaps, when the disagreement between the lengths of the horses became apparent to the artists the right border was stepped in to avoid destroying the symmetry by creating a large empty space behind the king's horse. Alternatively, it is possible that the panel was originally designed in the shape of a Golden rectangle with the horses a little closer together and during the execution the space between the horses was made too large and the king's horse had to be reduced in length to fit within the panel (fig. 22). In the first scenario, the frame measures approximately 10.12 metres in width and 5.25 metres in height, with a ratio of 1.927. In the latter case, the frame measures 9.16 metres wide and 5.25 metres high, just shorter than a Golden rectangle, giving a ratio of 1.745. The human figure in figure 22 demonstrates the impressive size of this relief.

Angles used in composition

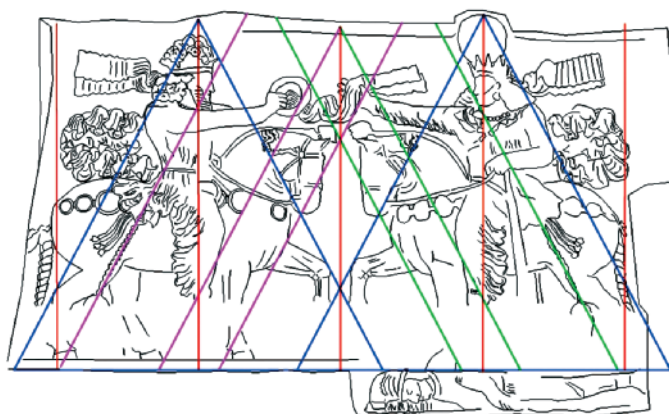


Fig. 23. Angles used in the composition of Bishapur V.

The balancing point of Bishapur V is clearly the centre line. Horse and rider of equal size are placed an equal distance from the midpoint. The fluttering ribbons from the investiture ring link the two sides. This exchange is the focal point of the entire composition and the design directs attention to it. The use of opposing angles gives the scene stability and harmony. From almost any point on the relief, the eye can be drawn back to the focal point through these diagonals. The horses and riders are bound by the basic triangles that govern these angles (fig. 23). The apex of the triangles are equidistant from the midline and encloses, in the rear, the back of the crown, back of the shoulder, hock of the horse's rear leg and in the front it runs under the horse's chin to touch the horse's raised knee. These angles are equal to the angles of the chain-suspended tassels.

Movement of the eye

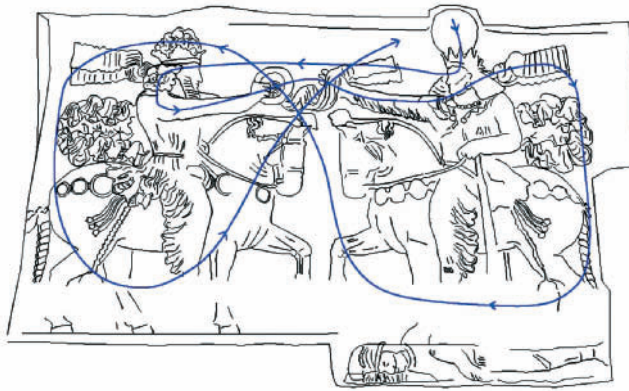


Fig. 24. Mapping the movement of the eye through the composition of Bishapur V.

The eye is attracted first to the high *korymbos* in the upper frame (fig. 24). It is then compelled to follow the line of the king's sight, which is directed at the face of the god, Ahuramazda. Once there, the eye returns in the direction of his outstretched arm, is linked into the king's arm by the ribbons and continues back to the king's head where it is drawn then into the flying ribbons behind him. From here, the eye casts down in a clockwise direction to take in the back of the king and the body of the horse. The king's leg and sword hang in an almost vertical position, as does the horse's head and raised foreleg, however, the eye is drawn up by the gap between the horses

where it slows momentarily before being attracted by the feature of the ring. From here, it continues naturally to the god's head and completes a reverse loop over the god's horse, through the investiture ribbons and back to the king. The composition guides the eye to criss-cross over the exchanged ring.

Division of frame

Bishapur V found most agreement with a grid of 21 (fig. 25).



Fig. 25. Bishapur V; division of frame by 21.

Composition of the king

Bishapur V is one of only four Sasanian reliefs to show the Sasanian king with a sword⁸, and one of only five to depict the king facing left⁹. Bahram I sits on his horse with his left hand on his sword and his right hand outstretched and leans slightly towards the offered diadem. He has a comparatively thick torso. This may be the artist's way of getting the king's hand closer to the ring. This is supported by comparison with other kings in this position, Darabgird and Naqsh-i Rostam VI, which show that his outstretched arm is rather long. Naqsh-i Rostam VI is one of those kings who

⁸ The other three are Naqsh-i Rostam IV, Naqsh-i Rostam VI, and Salmas.

⁹ It may be no coincidence that the above three reliefs that depict kings armed with swords are also three of the reliefs depicting the king facing left. Bishapur I also depicts the king facing left although his body is too badly damaged to determine whether he carries a sword. Therefore, it seems likely that viewers would believe the right facing kings to be carrying a sword on their hidden left side.

also carries a sword and faces left. These two kings also compare well in terms of cloak size, ribbon length, waist height and position of cloak fastenings on the chest. However, the Bishapur V king compares most closely with the king on the Bishapur IV relief. Despite sitting in different positions and facing opposite directions on the rock, when flipped and scaled they are almost identical in leg size, shape and position, curvature of the shoulder, position of the arm and placement of the necklace and chest fastenings.

Composition of the horse and rider

The position of the king's horse's hoof was projected from the left side of the relief. When the distance from here to the top of the *korymbos* is divided by two, the midpoint is just below the back of the horse (fig. 26).

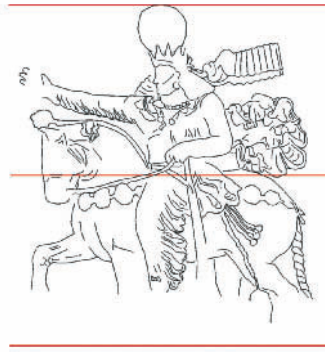


Fig. 26. Relationship of horse to rider at Bishapur V.

Composition of the horse

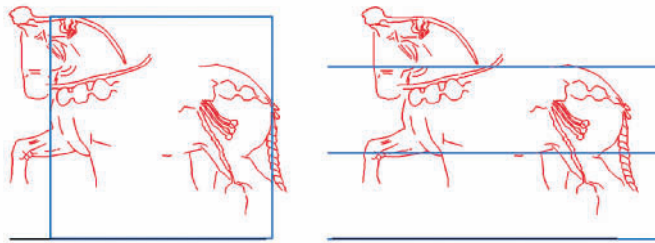


Fig. 27. Composition of the king's horse at Bishapur V. Horse fits inside a square from chest to rump and hoof to top of head; height of horse's legs roughly equal to height of rump. Base line indicates base of relief where horse's hoofs once stood.

The king's horse at Bishapur V has lost the lower half of its legs and the tip of its tail to the water channel cut through the rock. While unfortunate, this does not prevent comparison with the placement of the legs and features of the upper body (fig. 27). The horse raises its right foreleg to an angle of 338° . The horse actually faces left but like its rider has been flipped here to allow comparison with the more numerous horses facing right. The Bishapur V horse stands in a familiar position for these scenes with head bowed, ears pricked forward, right legs in advance of the left and right foreleg raised in front. The lower half of the foreleg hangs at a vertical angle, as does the head of the horse. The tassel chain is longer here than on any other relief. The Bishapur V horse finds most agreement with three horses: those from Bishapur III, Naqsh-i Rostam VI and Bishapur IV. The likeness between the Bishapur V horse and the horse from Bishapur IV is striking. The height of the rump is not preserved on Bishapur IV although they are alike in almost every other respect. They differ only in the thickness of the neck.

Sar Mashhad (Bahram II)

The Sar Mashhad relief is an immediately pleasing relief composed of four human figures lined up on the right and two lions on the left (fig. 28). The king heads the row of human figures in a powerful display of valour. He protects his dignitaries with his left arm and slays a launching lion with his right. A second, slain lion lies on the base of the frame and is thought to represent either a previously defeated lion or the final resting position of the one lion killed by the king. It is interesting to note that while the design includes two tails, the artist has only represented one set of hind feet. The opinion of scholars is divided on the symbolism of the lions and whether they represent one lion alive and then dead (Trümpelmann 1975: 11), or two separate lions (Herzfeld 1941; Hinz 1969: 215; Schmidt 1970: 131; Tanabe 1990: 37). There are also suggestions that they do not represent lions at all, for instance von Gall suggests that they represent the two religious enemies of Zoroastrianism: Manichaeism and Nestorianism (von Gall 1977: 151)¹⁰.

¹⁰ Whether the lions represent one or two lions and whether those lions are figurative or literal may continue as a matter of discussion because a conclusion is not necessary to continue with a study of the composition.



Fig. 28. Photograph of Sar Mashhad and line drawing overlaid.

Behind the king, above the human figures, the artist has purposefully carved a raised blank strip of rock. It is especially interesting because it does not continue in front of the king's large *korymbos*; it only covers the area above the three dignitaries. Kartir stands behind the king's outstretched arms but in front of his fluttering diadem ties. In order to demonstrate this spatial relationship, Kartir's feet stand on a higher level and he is reduced in scale. Although standing closest to the king, his position is not as prestigious as it may first seem. The other two figures are carved in higher relief than Kartir and although they overlap, they both stand in the same pictorial plane and share it with the king. The path of the viewer's eye supports this hierarchy when it first surveys the relief: it passes over Kartir to the female figure, then to the third dignitary and finally returning to Kartir. The artist's choice of moment is that precise moment when the king is simultaneously at peak threat and sure of ultimate victory. The king's right arm is fully extended, the sword is plunged deep into the body of the lion, the king is stable on his feet and his entourage is unafraid; we are in no doubt that the king has stopped the lion. Had the artist chosen a moment before the king wounded the lion, the fate of the king would remain uncertain. However in the moments following, the wounded lion would begin to wilt, the king would relax his body and the drama of the scene would be lost. By launching the lion from the left, the artist gives it extra ease and acceleration. Had the composition been reversed, the careful balance of the scene would be altered and the lion would immediately lose power. It would appear slow, laboured and less of a threat (fig. 29).



Fig. 29. Photograph of Sar Mashhad flipped to demonstrate the loss of power in a lion launching from the right side.

Basic composition of the frame

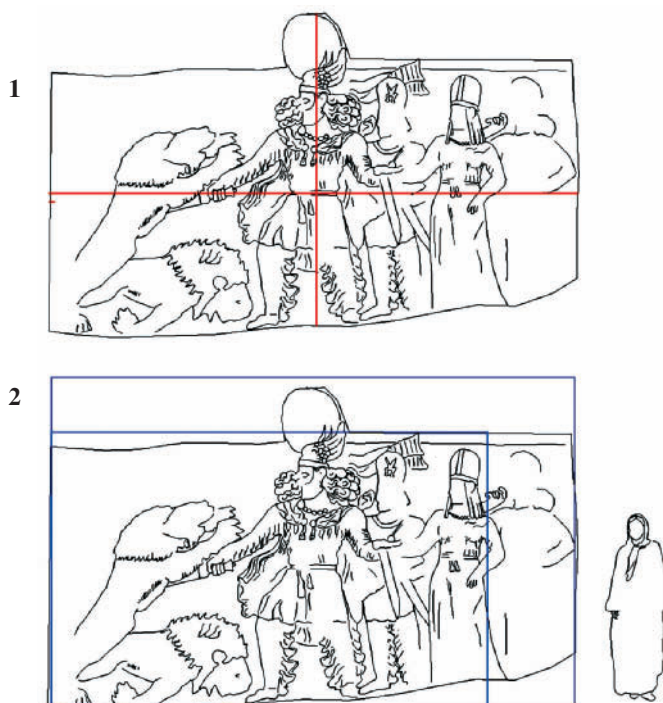


Fig. 30. Sar Mashhad overlaid by: midlines (top) and Golden rectangle (bottom).

The Sar Mashhad relief is 4.65 metres long and approximately 2.14 metres high. A panel of these dimensions is longer than a Golden rectangle (fig. 30, no. 2) and has a ratio of 2.17. The human figure in figure 30 indicates the actual size of the relief. The horizontal midpoint falls precisely down the middle of the king's torso and the vertical midpoint of the frame runs directly through the waistline of the king (fig. 30, no. 1).

Angles used in composition

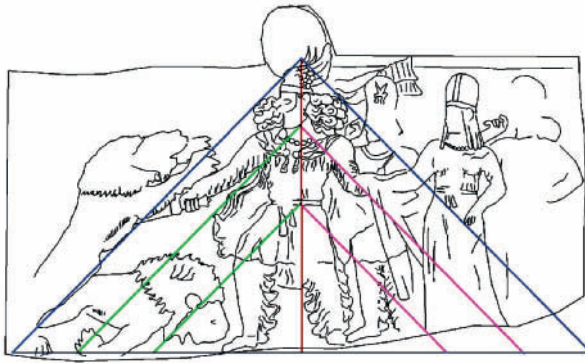


Fig. 31. Triangular composition and use of angles at Sar Mashhad.

The entire form of the king, from the extent of the sword to the tip of his left fingers, is circumscribed by a triangle that begins at the top of the relief on the centre line and extends at a shallow angle, skimming the tops of his hair, to the bottom corners of the relief (fig. 31).

The strong tension and potential movement in front of the king is in contrast to the calm composure of the figures behind him. The artist has achieved this contrast using angles (fig. 31). The king's right arm, cloak and right leg are all positioned at strong diagonal angles to match the angle of the launching lion. It gives us the sense that the king's lunge and thrust equals the force uncoiling in the lion's hind legs in order to stop the lion's attack before it gets off the ground. Behind the king, the three figures stand comparatively still. The male figures stand with both legs straight and shoulders even. The only dynamism of the right hand side is in the contact between the king and the female figure. Even so, their forearms join in a horizontal line. The right side of the relief is not dead; it is simply in contrast to the left (fig. 32)

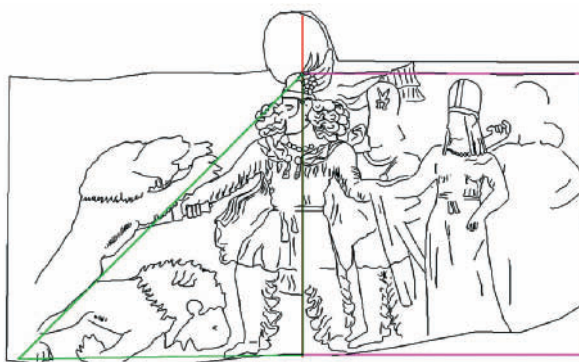


Fig. 32. Triangle and square highlighting basic structure of Sar Mashhad composition.

The female is the link to the other half of the scene as she participates in the action by slightly recoiling her body in unison with the king and her right arm mirrors the position of the king's right arm. This use of repetition unites these two figures and creates visual interest allowing the eye to move easily from the left side of the relief to the right. The king's flapping diadem ribbons also carry the upward angle of the lion through to the other side.

Movement of the eye

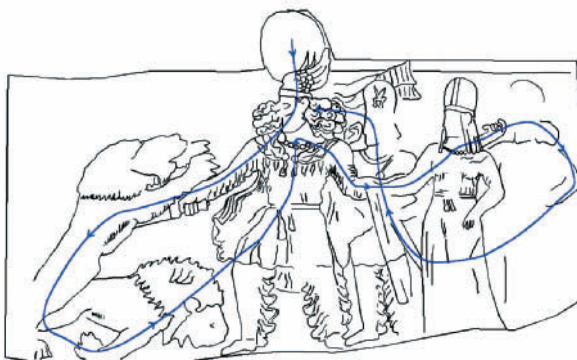


Fig. 33. Mapping the movement of the eye through the composition of Sar Mashhad.

The eye is attracted immediately to the figure of the king (fig. 33). Not only is he carved in higher relief and at the centre of the composition, he is also taller than the other figures and his large *korymbos* breaks the frame above his head. The eye surveys his face then moves down in the direction

of his sight and thrusting arm and into the body of the leaping lion. Before arriving at the feet of this lion, the eye is picked up by the slain lion carved beneath it. From here, the loop continues easily into the lunging leg of the king and returns to reassess his face in light of the new information. After pausing here briefly, it continues in the direction of the king's left arm and discovers the right arm of the female figure, which leads directly to the woman's face. Again the eye pauses to survey her face but instead of travelling along her line of sight the prince's raised right hand projecting from behind her back, coaxes the eye to continue in this easy clockwise journey. With no more figures to discover behind him, it continues down and around to inspect the bodies of these final two figures. At the knee of the female figure, it meets the diagonals of two swords. These diagonals aid the eye upwards over the body of the male figure closest to the king. It arrives at his head and is returned to the king by the direction of his glance and bent forefinger. In one survey of the relief, the eye passes over the king three times; he is clearly the focal point of the relief.

Division of the frame

The horizontal grid lines highlight features of composition that are not obvious to the unassisted eye. For instance, they show that the three dignitaries, although apparently standing on different ground levels, are actually of equal height at the top of their headgear. Therefore, the design intended them to stand to the same height though the execution of the baseline is unfinished and irregular (fig. 34). The features of this relief found most confluence with a grid of 16.

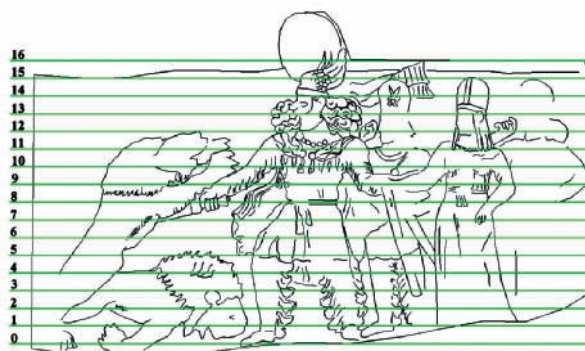


Fig. 34. Sar Mashhad; division of frame by 16.

Composition of the king

Bahram from Sar Mashhad is the only standing king involved in a non-ceremonial activity. This does not exclude him from comparison with other standing Sasanian kings however, as the left half of his body, the viewer's right, remains quite conventional. He stands with his torso frontal and his head and right leg in profile. His left leg is in a three-quarter profile and his arms are spread wide to both sides of his body. The results show that the Sar Mashhad king finds most agreement with the kings from Naqsh-i Rostam II and to a certain degree Naqsh-i Rostam VIII and Tang-i Qandil.

Sarab-i Bahram (Bahram II)

The Sarab-i Bahram relief is composed of five human figures: four standing figures flanking and facing a superior sized seated king (fig. 35). The standing figures are carved with heads in profile and bodies frontal while the seated king is frontal and faces the viewer. He engages the viewer's line of sight, making a powerful, personal connection; the effect is mesmerizing.

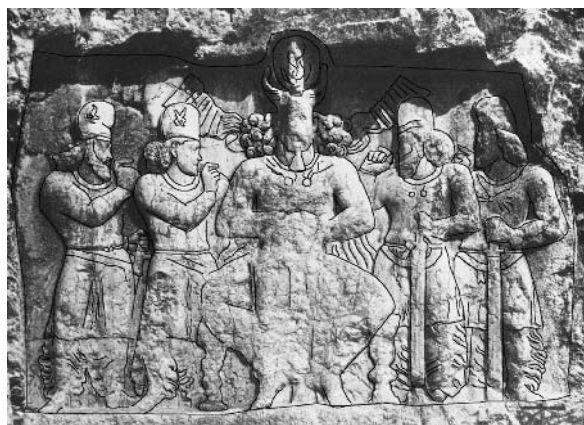


Fig. 35. Photograph of Sarab-i Bahram and line drawing overlaid.

The composition is strongly symmetrical and arranged around the central axis. While the symmetry is strong in the figure of the king, there is enough variety in the standing figures to prevent the composition from

becoming static. While the dignitaries standing to the viewers' left cross their body with their right arm and hold their sword on an angle on their left hip, the dignitaries standing on the viewers' right do not cross their body and hold their sword in a vertical position in front of their body. The repetition in the gesture and feeling of reverence among the standing figures compels the viewer to feel equal awe and respect. The design is dynamic and involves ample use of diagonals although there is little potential movement beyond the floating diadem ties of the king. One has the sense that if time began again for these figures there would be no movement beyond the quiet fluttering of the king's diadem ties. However, this is not a flaw in the design because here, the subject matter does not require a sense of potential movement; the lack of movement creates a sense of quiet veneration and loyalty. The artist is capturing a sentiment rather than an event and therefore no choice of moment is required. There is a small amount of overlap between the two pairs of standing dignitaries and where this does occur it serves as a saver of space rather than as an indication of distance. It is important to note however, that the two dignitaries standing on the king's immediate left and right are positioned behind the king's shoulders and behind the legs of his seat, although in front of his flapping diadem ties. These spatial cues place them immediately behind the king. The stature of the king is much greater than that of the standing figures; if he were to stand up, his height would be much greater than the other figures. It is difficult to know if the artist is using this convention to demonstrate that the king is much closer to us than his retinue, to demonstrate the king's actual stature or to emphasise his importance in the composition by increasing his size.

Basic composition of the frame

While tending to a rectangle, the general shape of the Sarab-i Bahram frame is a little irregular. The rectangle that it tends to is approximately 3.9 metres long and 2.5 metres high. These dimensions give a ratio of 1.56, which is close to the ratio of a Golden rectangle (1.618) as demonstrated by the rectangle in figure 36. The horizontal midpoint bisects the king and falls precisely through the centre of his crown, face, beard, cloak fastenings, hands and sword. The vertical midline runs under the king's resting forearms (fig. 36).

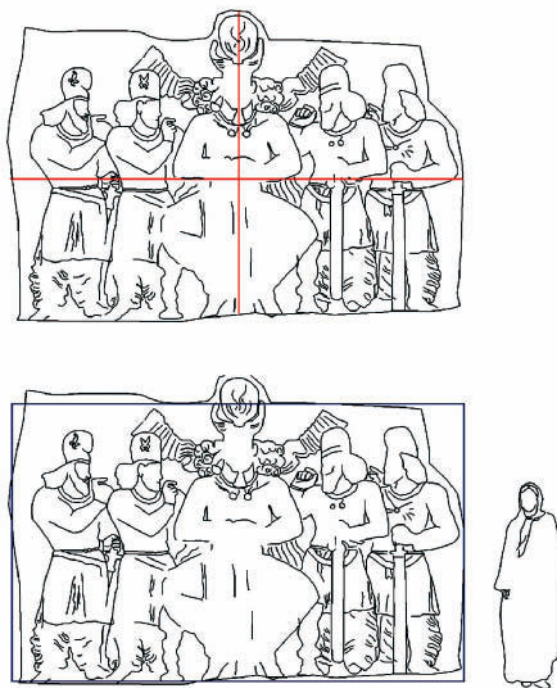


Fig. 36. Sarab-i Bahram overlaid by: midlines (top) and Golden rectangle (bottom).

Angles used in composition

The Sarab-i Bahram relief exudes a sense of quiet composure and stability. An analysis of the structure of the composition reveals the source of this feeling (fig. 37).

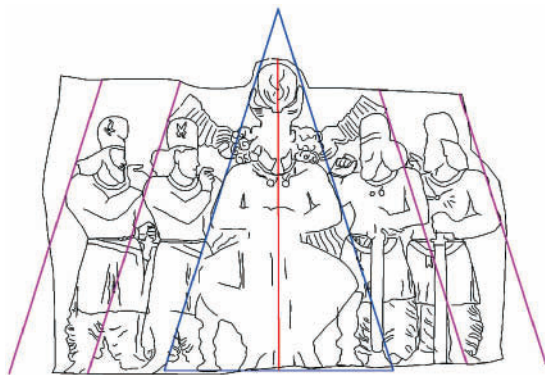


Fig. 37. Angles used in the composition of Sarab-i Bahram.

The Sarab-i Bahram relief is stabilised by a triangular construction. The sides of the triangle pass from the *korymbos*, over the king's hair, along the line of the king's upper arms and over his knees to the base of the relief. The same triangle can be expanded to include the two dignitaries by the king's side or again to include all figures (fig. 37). The angles of the basic triangle are repeated in the hipline of the dignitaries' tunics and the upper arms of the dignitaries' on the viewer's right. The placements of the lines in figure 37 demonstrate that while the dignitaries stand in different postures, the placement of their heads indicate that they are actually equidistant from the king.

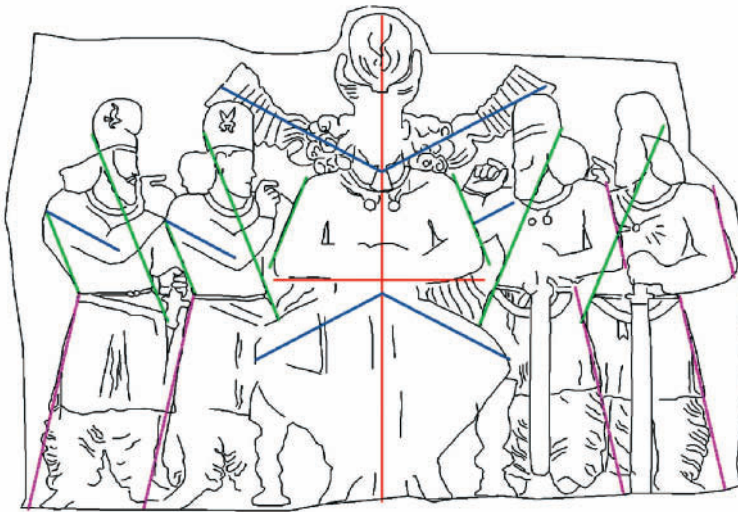


Fig. 38. Sarab-i Bahram: symmetrical composition and use of opposing angles.

The entire design is based on the re-use of only three sets of opposing angles (fig. 38). The angles of the fluttering diadem ties are flipped and reused in the angles of the king's seated thighs creating a well-balanced 'x' in the centre of the relief. The same angles are used in the upper arms of the dignitaries (fig. 38). The angles of the king's upper arms are reused in the tilted bodies of the standing dignitaries. They thrust their leading hip forward causing their upper torso to tilt slightly backwards. In the lower half of the frame, the angle of the dignitaries' tunics are equal and opposing. The same angle is repeated in the upper arms of the dignitaries on the right hand side (fig. 38). In comparison, the vertical sword and the symmetry of the king give him unflappable composure. His forearms are joined in a horizontal

line, on the vertical midline and while his legs are composed of angles, he is seated on a horizontal throne.

Movement of the eye

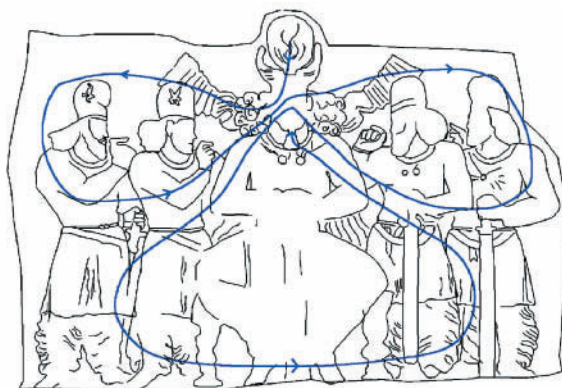


Fig. 39. Mapping the movement of the eye through the composition of Sarab-i Bahram.

The eye is drawn immediately to the king (fig. 39). He is the centre of the entire composition, his *korymbos* breaks the frame and his diadem ties frame and spotlight his face. The eye moves first to the more important left side of the scene, encouraged along the diadem ties, and surveys the two dignitaries standing there. It acknowledges the direction of their gaze although, because it already knows the king does not return it, the pull to return directly on this line is not strong. Before returning, it completes a loop of their upper bodies and is compelled to return by the direction of their bent forefingers and the bent arms crossing their bodies. It returns to the face of the king and continues in its clockwise direction to complete a loop on the right side that mirrors its path on the left side. This leads the eye for a third time to the king's face. Satisfied that it has examined the upper bodies of all figures present, it is left only to survey the lower halves of the standing figures and to discover that the king is seated on a throne. On completing this final loop, the eye arrives again at the head of the king, now clearly the focal point of the relief.

Division of the frame

The Sarab-i Bahram relief shows most agreement with a grid of 16 or 21 (fig. 40). These gridlines highlight the fact that the dignitaries on the

viewer's right raise their bent forefinger higher than those on the left even once differences in the level of the baseline have been accounted for. It also becomes clear that while other features of the dignitaries align better with a grid that is adjusted to the baseline, the dignitaries' waistlines align better on a horizontal line. Perhaps this is an indication that the line of the dignitaries' waistlines was marked out on the rock in the initial stages before the baseline became uneven.

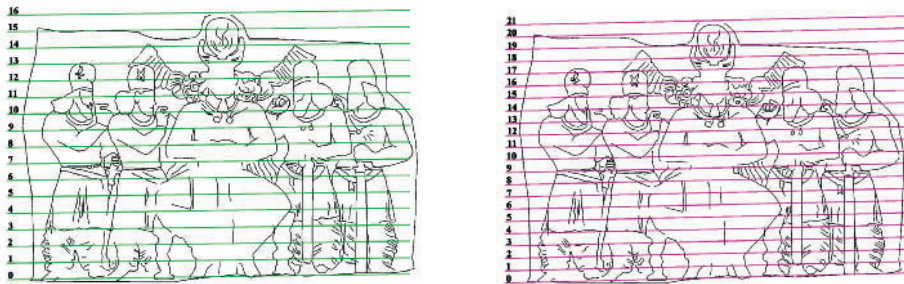


Fig. 40. Sarab-i Bahram; division of frame by 16 and 21.

Composition of the king

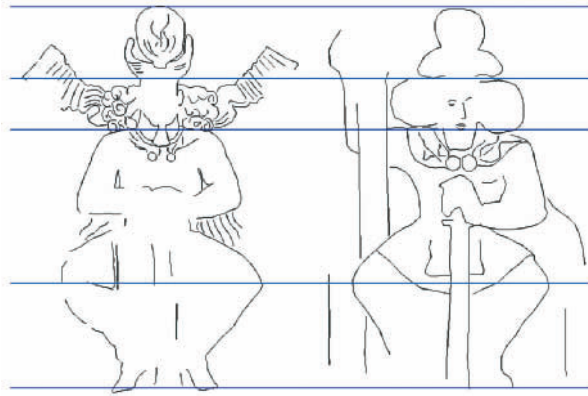


Fig. 41. Composition of seated kings at Sarab-i Bahram and Bishapur VI.

Bahram II from Sarab-i Bahram is one of only two Sasanian kings to be depicted in a seated position; the other is the king depicted at Bishapur VI (fig. 41, right). They are both seated with knees apart, ankles together and sword held centrally. However, when scaled to equal the same height from

foot to *korymbos* they differ in proportions of the body (fig. 41). At this scale, the two kings seem to have some similarities: shoulder height, bend in the knee and base of the crown. However, it is between these points that the differences become obvious: the head of the Bishapur VI king seems over-sized in comparison and the left arm supporting the sword is much larger. Bahram also has a lower waist. While composed on the same concept, it seems they were not constructed using the same rules of proportion. The most unnerving difference between the two is the position of the facial features at Bishapur VI; the king's mouth is where the chin should be. It is thought that this relief was once covered by plaster stucco that contained all the finer modelling of the features in the relief (Herrmann 1981: 21). It is possible that, after the stucco had eroded, a different artist carved the facial features that we see today and they mistook the bevelled beard for the king's chin and placed the facial features too low.

Bishapur IV (Bahram II)

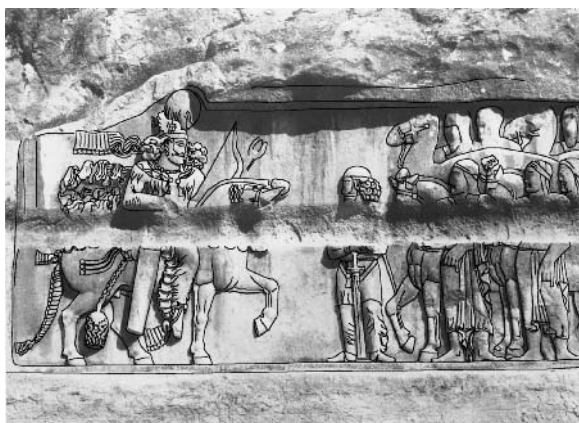


Fig. 42. Photograph of Bishapur IV and line drawing overlaid.

The Bishapur IV relief is composed using eight people and five animals. It depicts Bahram II greeting an Iranian dignitary who presents to him a group of six men, two horses and two camels. Together they form three distinct units: the equestrian king, the dignitary and the delegation. The king is separated from the dignitary by a large space and the dignitary from the delegation by a small space. This small space is of vital

importance to our understanding of the hierarchy in this scene. The king, alone and on the left side of the panel is clearly dominant. He is linked to the right side of the panel only by his engaged eye contact with the leading dignitary. The dignitary is close enough to the closely packed delegation to appear to belong with them and separated enough to clearly not be one of them. The distance in front of him, between the king's horse and himself is not wasted space, rather it adds weight to the king and establishes the relationship between the king and this dignitary (fig. 42). Flandin and Coste, when reproducing this relief, have cast the king's gaze directly over the head of the dignitary and the entire delegation (fig. 43). By altering this seemingly small detail, the unity and meaning of the whole scene is disrupted.

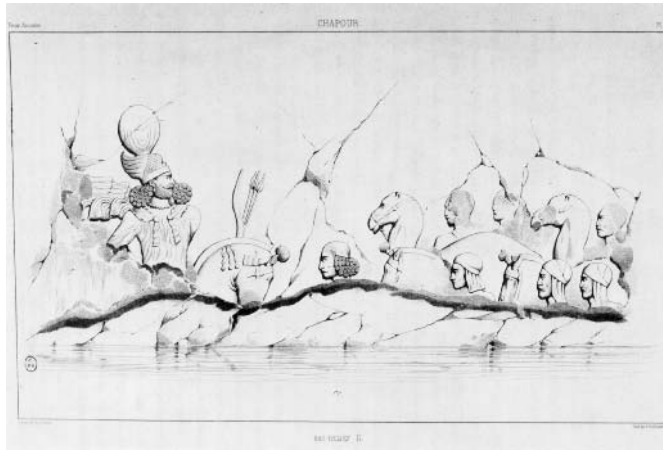


Fig. 43. Flandin and Coste sketch of Bishapur IV.

Basic composition of the frame

The Bishapur IV panel is long and narrow; it is approximately 7.45 metres long and 3.45 metres high. These dimensions create a shape that is longer than a Golden rectangle and have a ratio of 2.16 (fig. 44). The horizontal midpoint divides the scene between the king's horse and the leading dignitary. This point also serves as the balancing point. The vertical midpoint falls within the strip of carving destroyed by the water conduit (fig. 44). The human figure in figure 44 indicates the actual size of the relief.

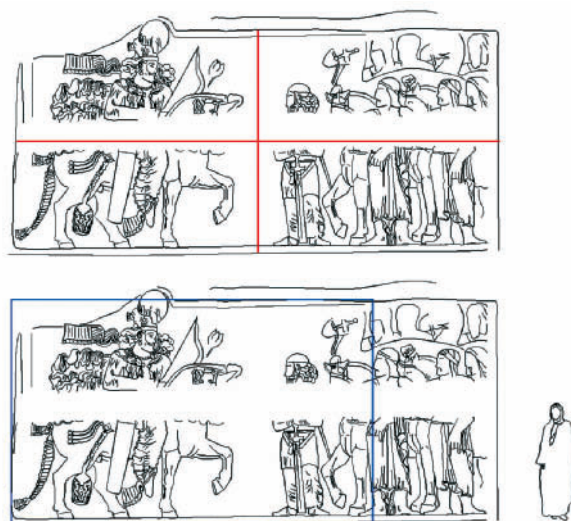


Fig. 44. Bishapur IV; golden rectangle (bottom) and midlines (top)

Angles used in composition

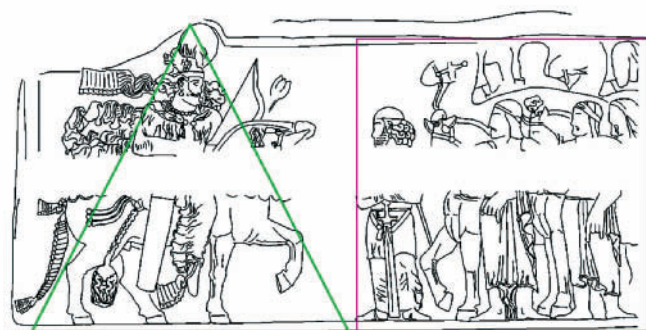


Fig. 45. Basic structure of Bishapur IV.

Figure 45 highlights the contrast between the constructions of the two halves of the relief. The equestrian king is designed on a triangular construction and all the figures on the left side fit within a square and are constructed using largely horizontal and vertical angles. This difference gives the viewer the impression that the king has arrived towards a still and waiting group of men and animals.

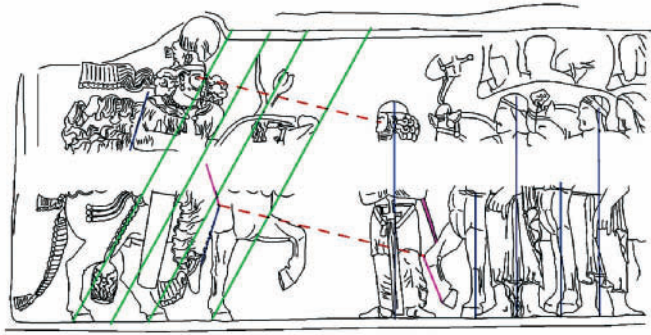


Fig. 46. Angles used in the composition of Bishapur IV.

The equestrian king is constructed using repeated diagonal angles highlighted for example in the swinging tassel and the king's bow and arrows (fig. 46). However, the group of figures facing and balancing the king is constructed with an almost complete lack of diagonals (fig. 46). Although constructed using different frameworks, the artist has linked these two seemingly incoherent components by creating visual magnets on either side of the balancing point. These are primarily the pull along the line of sight between the king and leading dignitary but also the repeated use of angles along the same line from the king's knee to the first horse's raised foreleg. The two horses' raised forelegs imitate the relationship of the king and dignitary and they join on the same angle.

Movement of the eye

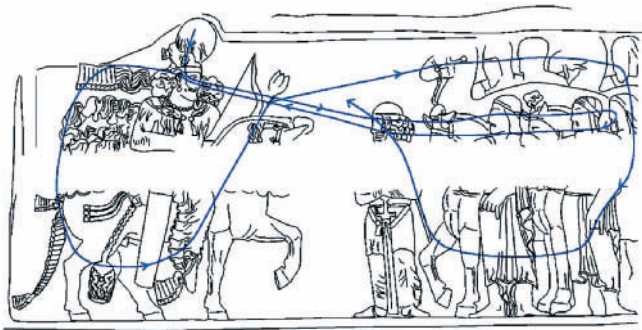


Fig. 47. Mapping the movement of the eye through the composition of Bishapur IV.

The eye is attracted to the break in the frame occupied by the king's *korymbos* (fig. 47). From the king's face, it follows the king's line of sight, curious to find the object of his attention. It arrives first at the leading dignitary and finds a returned line of sight. However, the attraction of the mass behind the dignitary is too great for the eye to return to the king immediately. The eye makes a cursory inspection of the faces behind the dignitary and finds more returned glances and so returns to the object of their attention, the king. It is drawn beyond the king's head by the fluttering diadem ribbons and travels down to observe the king's horse. It is picked up by the king's leg and travels in the direction of the king's bow and arrow. Now in the upper plane it is attracted by the head of the camel. The line of the camel's back aids the eye along the upper plane and down to revisit the final figure of the lower plane. This time the eye has a chance to survey the bodies of the delegation in a clockwise direction back to the leading dignitary and finally back to the king. It is clear from this exercise that the focal point of the relief is the relationship between the king and the leading dignitary.

Division of frame

Features of this relief support a grid of 21 (fig. 48).



Fig. 48. Bishapur IV; division of frame by 21.

Composition of the king

The Bishapur IV relief is the only relief in which Bahram II is seen mounted and unfortunately, the water channel once attached to the cliff

face obliterated a portion of his body from mid-thigh to mid-waist. Therefore comparison of waist heights is not possible. The width of the chest gives a good indication of the size of the torso. Presumably, his left hand is at the reins and his right holds the bow and arrow protruding from behind his horse's head and neck. Comparison with other kings seated in this pose reveals that he has quite square shoulders and a comparatively narrow waist. His head is tilted slightly forward so that his forehead is in advance of his chin. His bent knee adds to the tension expressed in his square shoulders. The king at Bishapur IV finds more congruence with the kings at Bishapur II, Bishapur III and Bishapur V. The kings from Bishapur II and Bishapur III are the only other non-jousting equestrian kings to be depicted carrying a quiver. Shapur from Bishapur II shares the same chest proportions and leg length. Shapur also wears a slightly larger necklace of roundels and chest fastenings. Aside from the different position of the right arm, the agreement between Shapur from Bishapur III and Bahram from Bishapur IV is striking. They only differ significantly in the angle of the king's leg and the size of the diadem ties. Despite originally facing opposite directions, the agreement between the kings of Bishapur IV and Bishapur V is also very close. The size, shape and position of the leg is identical.

Composition of the horse and rider

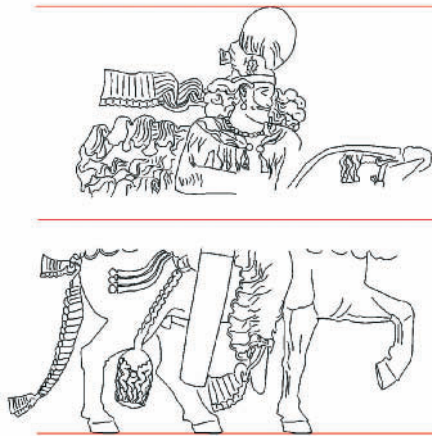


Fig. 49. Relationship of horse to rider at Bishapur IV.

When the height of the mounted king, from *korymbos* to hoof is divided by two the midpoint falls within the damaged area of rock (fig. 49).

Composition of the horse

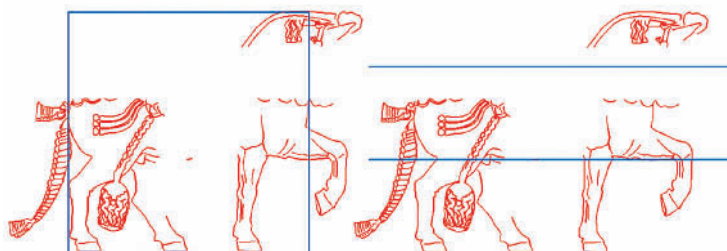


Fig. 50. Composition of the king's horse at Bishapur IV. Horse fits inside a square from chest to rump and hoof to top of head; height of horse's legs roughly equal to height of rump.

The king's horse at Bishapur IV stands with the left legs in advance of the right and the left foreleg raised. It is raised to an angle of 334° and the lower leg hangs vertically (fig. 50). The only other horses with the lower leg hanging vertically are the king's horse at Bishapur II and Bishapur V. The water channel has destroyed the horse's head from below the ears to the tip of the nostril. Fortunately, the very end of the muzzle survives so the length of the head is known. The upper curve of the rump has also been destroyed so comparison in this respect is not possible.

The horses from Bishapur III, Naqsh-i Rostam VI and Bishapur V, compare well. Although displaying slightly thicker necks, all three have a similar size head and neck curvature. The foreleg of the Bishapur V horse is raised to approximately the same angle and similarly, the lower foreleg hangs vertically. The angle and placement of the tassel chain on Naqsh-i Rostam VI and Bishapur IV is almost identical.

Naqsh-i Rostam VIII (Narseh)

Narseh's relief at Naqsh-i Rostam is composed of five standing figures; the king stands in the centre leading two male dignitaries, the goddess Anahita faces the king and a small male figure, probably a boy, stands between them (fig. 51).



Fig. 51. Photograph of Naqsh-i Rustam VIII and line drawing overlaid.

The composition of this relief clearly communicates a sense of ceremony and occasion. The balance of the principal group and the repetitive posture of the male figures facing right help to achieve this mood. The small distance between the first dignitary and the king separates the left from the right, adding weight to the left side and adding to the entire sense of formality. This respectful distance is in contrast to intimate placement of the small boy standing between the king and the goddess, touching their toes and overlapping the hanging diadem ties.

The artist has chosen to depict that moment in the passing of the diadem from goddess to future king when both parties grip the ring equally (Spycket 2000; van Buren 1949). A similar moment is depicted only at Naqsh-i Radjab III between Ardashir and Ahuramazda¹¹. This choice of moment, while temporarily static, injects life and a sense of potential movement into the scene. The viewer is assured of the investiture of the king and can easily imagine the series of moments that occurred before it and would occur after it if this moment were not frozen in stone. By having both parties firmly in possession of the ring, the artist is able to create a connection and intimacy between the two figures that is lacking in other investiture scenes.

¹¹ Also, Naqsh-i Radjab III is the only other relief to feature the figure of a small boy beneath the shared diadem.

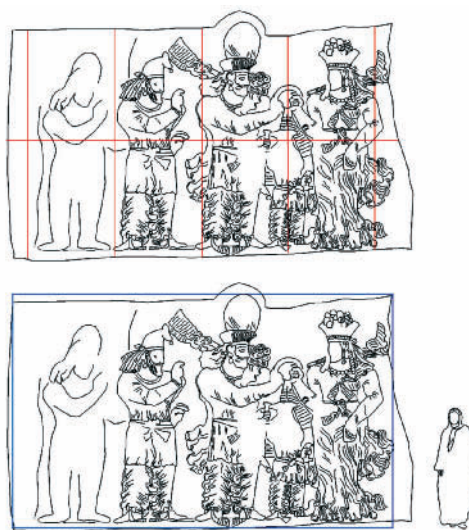
Basic composition of the frame

Fig. 52. Naqsh-i Rustam VIII overlaid by: midlines (top) and Golden rectangle (bottom)

The Naqsh-i Rustam VIII panel is approximately 5.75 metres long and 3.65 metres high. These dimensions create a rectangle with an x:y ratio of 1.58, which is close to the shape of a Golden rectangle (fig. 52). The human figure in figure 52 indicates the actual size of the relief. The horizontal midpoint falls just behind the figure of the king, through his right shoulder. The centre of the ring marks the midpoint between the king and the female figure. The same distance separates the first dignitary from the king and the second dignitary from the first (fig. 52). This is the only investiture scene not arranged around a central axis. The horizontal midpoint falls through the king's right shoulder and the focal point lies in the centre of the right side of the panel. The centre of the king acts as the balancing point of the composition. Although the area left of this fulcrum is larger than the right, balance is achieved in a number of ways. The right side of a composition is naturally heavier and by placing the centre of interest on the right, the right immediately gains more weight. The density of the three principal figures forms them into one large unit rather than three separate people and gives them yet more weight. Moreover, it is the spaced arrangement and repetition in posture of the two dignitaries that allows them to balance such a heavy right side.

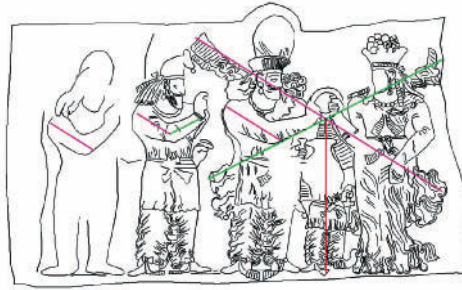
Angles used in composition

Fig. 53. Angles used in the composition of Naqsh-i Rustam VIII.

The principal figures are arranged on the right hand side of the panel. The arrangement of the diadem ties and fluttering cloaks forms two strong opposite diagonals that cross them and intersect at the diadem (fig. 53). These diagonals help to balance the group but also direct the viewers' attention almost helplessly towards the jointly held diadem. These angles are repeated in the angle of the men's bent right arms. The centre of the ring is the exact midpoint between the king and goddess. This point also bisects the boy standing between these two figures. His vertical quality is emphasised by the vertical split between the two diadem ribbons above his head. He stabilises the action of the two diagonals above him and forces the eye to pause in the centre.

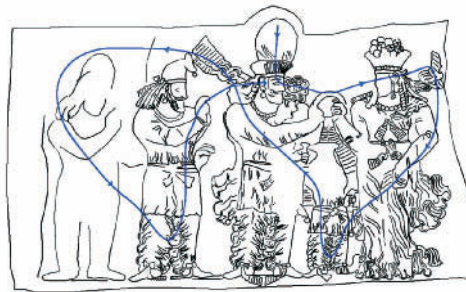
Movement of the eye

Fig. 54. Mapping the movement of the eye through the composition of Naqsh-i Rustam VIII.

Although the balancing point of this composition is not on the centre line, when the eye is moving through it, it performs the same movement over both sides of the centre line (fig. 54). The eye is naturally attracted to the tallest object and that which breaks the upper frame of the panel: the king's *korymbos*. It follows the king's line of sight, directed at the face of Anahita, and takes in the diadem between them, held just below their eye line. The eye is drawn beyond her face by the flapping diadem ties and then travels down along her gently bent arm towards the figure of the boy standing between them. It travels over his body pausing briefly to observe his position before continuing in the same direction, supported by the king's upper arm. From the upper arm, it moves easily along the diadem ties and into the left half of the relief. From here it performs a loop passing over the unfinished figure, surveying the first dignitary, and following the direction of his raised, bent forefinger and arriving back at the king's face and his eye contact with Anahita. The focal point of the entire composition is the interaction between these two figures.

Division of frame

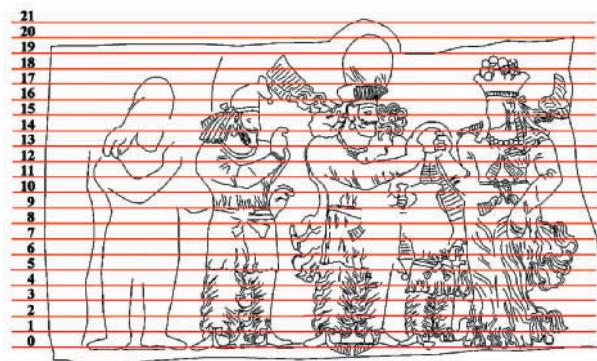


Fig. 55. Naqsh-i Rustam VIII; division of frame by 21.

Features of this relief found most agreement with a grid of 21 (fig. 55).

Composition of the king

Narseh stands frontally, facing right, head and feet in profile. His right arm crosses his body to grasp the ring while his left hand grips the hilt of his sword suspended on his left hip. His diadem ribbons fly out and up and his

cloak flutters out and down. On comparison with other standing Sasanian kings, he has broad, high shoulders, a thick neck and a robust jaw line. The figure of Narseh finds most likeness with the figure of Bahram from Naqsh-i Rostam II. Bahram at Naqsh-i Rostam II holds both hands in front on his centrally placed sword and stands facing left although excluding Narseh's exceptionally large shoulders, he seems to share the structure of Narseh at Naqsh-i Rostam VIII. When he is scaled to suit the height from crown to foot the only major difference is the size of the shoulders. They share the same size feet, thickness of the legs, hem length, belt height and jaw line.

Conclusion

The sample results presented in this paper support the hypothesis that an analysis of composition will allow works of art, in this case Sasanian rock reliefs, to unite or divide on elements of composition. These relationships can further our understanding of the Sasanian Empire and reveal the nature of the artistic environment at the time. At the present, the research and analysis indicates the presence of artists from at least two schools of art operating concurrently.

Taking all results together, using only the eight reliefs presented in this paper, the following artistic relationships can be demonstrated on the basis of composition: Bishapur V, Bishapur IV, Sar Mashhad and Naqsh-i Rostam VI have emerged from the analysis as a tight group. There are three different kings depicted in this series. Bishapur V and Bishapur IV are carved alongside each other in the gorge at Bishapur, they depict father and son and they are shown to be related by composition. Their underlying structure makes use of the same angles (62° , 298°) and both reliefs support a grid of 21. Despite facing opposite directions on the rock, the physical similarity of the kings and their horses confirms their relationship. The construction of Naqsh-i Rostam VI also uses the same angles (62° , 298°) and supports a grid of 21 and shares physical similarity with the king and horse. Sar Mashhad is included in this group because it is carved in the same shape panel as Bishapur IV and Naqsh-i Rostam VI and in all three reliefs the king holds the focal point making direct, downward eye contact with the subject. Another group is formed by Naqsh-i Rostam III and Naqsh-i Rostam I. Both were commissioned during the reign of Ardashir I. Despite Naqsh-i Rostam III depicting a standing scene and Naqsh-i Rostam I depicting an equestrian

scene, an analysis of composition has highlighted their relationship showing that they both use the centre and the ring as the focal point; they are both constructed using a geometric structure of the same angles (67° , 293°) and they are both carved in the same shape panel, a Golden Rectangle. Sarab-i Bahram and Naqsh-i Rostam VIII can also be grouped together. They both place the king in the centre of the composition breaking the frame with his *korymbos*; they both support a grid of 21 and they both make use of the same angles (28° , 332°), in the same shape frame.

In particular, the examination of proportion clearly demonstrates the process of crystallised artistic conventions. There is striking uniformity in the composition of all the horses in this sample group. For instance, although there are differences in detail, they are all as long, from the chest to the rump, as they are tall, from the hoof to the top of the head. This information indicates that the conventional representation of a horse became crystallised in a school of art prior to the Sasanian dynasty and has been widely accepted as the true and right proportions for a horse. Then it is particularly interesting to find a horse that is depicted using a different set of proportions. Similarly, all the equestrian kings from this group, while showing differences in stature and *korymbos* size, were drawn using a rule that the midpoint between the base of the horse's hoof and the top of the king's *korymbos* will approximate the top of the horse's back. These examples also support my proposal that the rock was marked out or divided up in some way to aid the reproduction of a composition with accurate proportions. In addition, when studying the standing kings as separate compositional elements they appear to vary in many ways: in the direction they face, the gesture they make, the width of their shoulders, the size of the waist, the length of the tunic and the position of the head. However, compositional analysis shows that they in fact share the same proportions of the body.

The compositional analysis outlined in this paper is repeated in my doctoral thesis for all of the early Sasanian rock reliefs carved in Fars (Thompson 2004). With further use and experimentation, the technique will continue to develop and mature and further insights will be gained on the art of the Sasanian period. This new information now requires new research into the origin and meaning of the detected relationships, as well as an investigation into the extent of the Sasanian knowledge of the Golden ratio and its properties. The meaning of these results can be furthered in the future by expanding the research into surrounding regions and time periods to detect the source of influence and the rate of adoption.

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